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Ontario Department of Agriculture

FIFTY-SECOND ANNUAL REPORT

OF THE

Fruit Growers' Association

OF

Ontario

1920

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO



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1921

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To His Honour H. LIONEL CLARKE,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the honour to present herewith for your consideration the **Fifty-second Report of the Fruit Growers' Association of Ontario for the year 1920.**

Respectfully yours,

MANNING W. DOHERTY,

Minister of Agriculture,

Toronto, 1921.

CONTENTS

	PAGE
OFFICERS FOR 1921	5
FINANCIAL STATEMENT, 1921	6
ANNUAL CONVENTION	7
PRESIDENT'S ADDRESS: DAVID ALLAN	7
SOME FURTHER LIGHT ON THE WINTER INJURY PROBLEM: J. A. NEILSON	8
BIENNIAL FRUIT BEARING IN THE APPLE: J. W. CROW	12
AN ONTARIO SALES AGENCY FOR APPLES: C. W. BAXTER	16
THE ONTARIO NURSERY CONTROL ACT: W. J. BRAGG, M.P.P.	21
CARRIERS' PROTECTIVE SERVICE: G. E. MCINTOSH	22
THE MARKET SITUATION IN GREAT BRITAIN: HON. MANNING W. DOHERTY	29
THE PACKAGE SUPPLY FOR 1921:	
BASKETS AND CRATES: J. M. WALLACE	33
BARRELS: W. A. FRASER	37
BOXES: S. H. MOORE	40
THE GRAPE MARKETING SITUATION IN 1920-21: T. J. MAHONEY	46
NEW YORK STATE PACKING ASSOCIATIONS: N. R. PEET	51
CAN PRODUCTION COSTS IN THE GROWING OF SMALL FRUITS BE LOWERED?: E. A. ORR	59
REPORT OF TRANSPORTATION COMMITTEE	60
REPORT OF HISTORICAL COMMITTEE: A. W. PEART	61

Fruit Growers' Association of Ontario

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London: J. C. HARRIS, Ingersoll, and A. SADLER, Lambeth.

Ottawa: W. T. MACOUN, Ottawa.

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Horticultural Publishing Company: HAMILTON FLEMING, Grimsby..

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FINANCIAL STATEMENT

1920.

RECEIPTS.		EXPENDITURES.	
	\$ ¢		\$ ¢
Bal. on hand Dec. 31,		Annual Meeting	80 50
1919	953 70	Committees	113 90
Fees	193 50	Show	58 04
Show	46 65	Stock	150 00
Interest	21 33	Printing	35 25
Grant	1700 00	Miscellaneous	264 02
		Balance on hand	2213 47
	2915 18		2915 18

DETAILS OF EXPENDITURE.

ANNUAL MEETING.

	\$ ¢	\$ ¢
Consumers Gas Co.	15 50	
Maud E. Coo, reporting	60 00	
<i>The Journal</i> , advertising	5 00	80 50

COMMITTEES.

A. A. Craise	19 55	
J. C. Keeler	20 15	
H. K. Revell	15 80	
H. Sirrett	16 55	
H. Fleming	7 15	
W. M. Fletcher	34 70	113 90

SHOW.

G. H. Martyn & Sons, fruit	18 00	
Jos. R. Canham, fruit	3 00	
P. W. Hodgetts	3 30	
Freight, G.T.R.	33 74	58 04

STOCK.

<i>Canadian Horticulturist</i>	100 00
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MISCELLANEOUS.

Printing, College Press, Envelopes, Vouchers, Membership cards	\$35 25
Clerical help	242 00
Auditing	10 00
Dominion of Canada Guarantee and Accident Co., Treasurer's Bond, \$10.00	
Interest, etc., \$2.02	12 02

Fruit Growers' Association of Ontario

ANNUAL CONVENTION

The sixty-first annual meeting of the Fruit Growers' Association of Ontario was held at the Prince George Hotel, Toronto, on the 16th and 17th of February, 1921. Much interest was manifested in the proceedings, as the addresses and discussions were of a most practical character.

Mr. David Allan, of Grimsby, President of the Association, occupied the chair.

PRESIDENT'S ADDRESS

DAVID ALLAN, GRIMSBY.

We met last year in connection with the Horticultural Exhibition held, in November, in the Canadian National Exhibition Buildings, which in itself carries with it an educative influence that should tend to send us back to our homes to produce better fruit than ever before.

Owing to the uncertainty of climatic conditions and the almost impossibility of heating the building, we felt that we could not take a chance on a repetition of conditions such as we labored under at our last meeting, and so we had to forego meeting in conjunction with the Horticultural Exhibition this year. However, I trust that arrangements will be completed in the near future whereby we can meet with every comfort and convenience assured, in the same building and during the week of the Exhibition, thus combining business with pleasure. We further decided that owing to the difficulty of securing accommodation, even in this great city of Toronto, to confine our convention to two days.

We place our program in your hands with a good deal of satisfaction—because we believe it is a good one—and because we believe it deals with things in connection with our industry that are vital at the present time; such as our Package Supply, an Ontario Sales Agency, Transportation, Marketing Conditions both at home and in Great Britain, and Co-operation as an essentiality in our business.

During the year just past, we were vigorously engaged in combating the proposed increase in express rates, and with considerable success, by having the proposed increase materially reduced. The history of 1920 is written, and from a fruit grower's standpoint it was in many respects different to that of any previous year.

In 1920 we had undoubtedly the largest production of fruit of almost every kind ever previously experienced. It looked like a good thing for the growers and surely would have been but for one or two conditions that prevailed—such as the deflation in the prices of our product, and the inflation in the prices of containers. And again, we labored under a system of distribution that was entirely inadequate to cope with the situation, with the result that central points were glutted and markets ruined, for a time at least. So that the returns did not allow any profit, thus resulting in thousands of baskets of peaches and plums being left on the trees. The remedy, I believe, is in the one word—CO-OPERATION.

We, as fruit growers, have reason to feel deeply indebted to the Hon. Manning Doherty, Minister of Agriculture for Ontario, for his personal interest in our industry as shown by his taking the initiative in endeavouring to improve our marketing conditions. Our thanks are also due to Mr. C. W. Baxter, Fruit Commissioner, Ottawa, for his whole-hearted assistance in everything that would tend to the betterment of our business.

SOME FURTHER LIGHT ON THE WINTER INJURY PROBLEM

J. A. NEILSON, LECTURER ON HORTICULTURE, O. A. COLLEGE, GUELPH.

Extent of Losses Caused by Winter Injury. Winter Injury of fruit trees is not an unusual occurrence in Ontario and other countries having similar climatic conditions. As a matter of fact some injury occurs in almost every winter, but in some winters, however, the loss is very great. The winter of 1917-18 was perhaps the most disastrous ever experienced in Ontario, many thousands of trees being killed outright and hundred of thousands more damaged to a greater or less degree. At this date, almost three years later, the full extent of the damage done has become apparent. All kinds of fruit trees were found or reported to be injured, the amount of injury varying with the locality, kinds and varieties grown. In extreme cases 100 per cent of the trees in some Baldwin apple orchards were reported killed. In other cases the loss was very much less. In Eastern Ontario the loss in apple orchards ranged from 20 to 50 per cent., but in Western Ontario the damage was not so heavy. Peach trees suffered considerable injury. One grower in Kent is said to have lost twenty acres of young peach trees, and much damage was reported from the Forest District. Fruit growers in every province in Canada where tree fruits are cultivated reported more or less damage. In the United States a similar condition of affairs prevailed, injury of greater or less extent being reported from every state in the northern part of the American Union.

Forms of Winter Injury. Nearly all the forms of Winter Injury noted by others who have studied this question, were seen by the writer during the summers of 1918-19 or have since been reported by correspondents living in widely separated parts of the apple growing regions of Canada and the United States. These range from complete killing of the tree to bud killing and include root injury, collar rot, bark splitting, trunk splitting, crotch injury, sunscald, blackheart, killing of bark on large and small limbs, killing of fruit spurs, killing of fruit buds, and killing back of terminal growth.

Factors that Cause or Predispose Fruit Trees to Winter Injury. A study of winter injury reveals many interesting points regarding the factors that cause or predispose fruit trees to damage during the winter months.

(1) *Climatic Conditions.*

a. Low Temperatures. Very low temperatures prevailing for some time during the dormant season nearly always produce more or less injury which may manifest in one or more of the various forms listed above.

b. Sudden Changes of Temperature. A sudden and great drop of temperature during the early part of the winter such as was noted in December, 1918, is responsible for certain forms of winter killing which may manifest as bark splitting, trunk splitting, or blackheart. Great variations in the day and night air temperatures which often occur during the late winter or early

spring produce similar temperature changes in the bark of trees on the south side of the trunk and large branches running to the north, this causes a rupture of the cells and produces what is known as "sunscald."

c. Cold Winds: Fruit trees growing on sites exposed to strong cold winds are invariably injured more than those growing in well protected sites having good air and soil drainage. Many examples of the effect of cold winter winds have been observed by the writer in Ontario and reported by numerous correspondents in other sections of America.

Winds may Operate in any one or all of the following Ways: (1) Winds increase the evaporation of moisture from the bark in winter and may cause complete drying out and the death of the tree.

(2) Winds sweep away the snow from the ground thus allowing frost to penetrate deeply and causing in some cases root injury or crown rot, especially on varieties worked on tender root stocks.

(3) Strong winds evaporate moisture from the soil and thus rob the trees of the moisture they require to go through the dormant period.

Soil Conditions: Soil types and conditions have an important bearing on the power of fruit trees to withstand severe winter cold. Very heavy soils or shallow soils underlaid with a hard impervious sub-soil or shallow soils with a light, gravelly sub-soil are generally not satisfactory for fruit trees because on such soil-types trees make a weak growth and hence are not so well able to stand severe climatic conditions.

Wet Soils: Poor soil drainage is a predisposing factor of very great importance. This point cannot be emphasized too strongly as this soil condition is probably responsible for the death of more trees than any other single factor except that of heavy bearing. An excess of moisture in the soil retards plant growth in the spring, but on the other hand it causes a late growth in the autumn. This is due to the fact that water heats up more slowly than soil and therefore we find that wet soils are always colder in the spring and plant growth is correspondingly later on such soils than on well drained soils. In the autumn, however, the reverse occurs. Wet soils are warmer than well drained soils, because after being warmed by the summer sun the water loses its heat more slowly than soil and thus keeps the soil warm around it. The increase in the soil temperature and the excessive amount of moisture present, especially the latter factor, often causes growth to continue at a season when the growth of trees ordinarily should cease and the tissue be ripening and hardening for the winter. This late succulent is often killed back and the bark of such trees is sometimes severely injured by bark splitting. The writer has seen several cases of very serious injury by bark splitting which was largely due to poor soil drainage.

Cultural Methods. Cultivation continued later in the season than usual or clean cultivation are factors which contribute to winter injury. Soils cultivated late in the season or soils on which no cover crop has been sown contain more moisture than is found in soils which are growing cover crops of some kinds, and this moisture often causes a late growth, which in some seasons does not have time to properly ripen before frost occurs.

Bare soils always freeze deeper than soils which have a protective covering of some kind such as snow or a mat of plant growth. In some cases a covering of vegetable matter or snow makes a difference of several inches in the depth to which frost penetrates. The effect of a cover crop in preventing deep freezing

was shown very clearly by Prof. Jos. Oskamp, of Purdue University Experiment Station. In a series of experiments with cover crops he found that frost penetrated to a depth of 57 inches on a bare plot after six weeks of severe freezing in the winter of 1917-18, while on an adjoining plot protected by a cover crop of millet, the frost penetrated to 37 inches.

Cover crops also check late fall growth by absorbing the moisture and help to hold the snow; thus adding to the soil covering, and in other ways operate to the benefit of the trees.

Plowing the soil away from the base of the trees late in the fall and thereby exposing the crown of the tree to the action of frost is liable to cause injury to the crown of some tender varieties such as Ontario, Grimes, Pewaukee, King and others of a similar degree of hardiness. This form of injury is called collar rot or crown rot.

Soil Fertility: Soil Fertility is also an important point in a study of winter killing. Trees growing on properly drained soil well supplied with the substance required for plant growth invariably stand any unusual climatic condition better than other trees growing on soils deficient in plant food. This statement applies to both young and old ex-bearing trees, but especially to bearing trees. Very occasionally one may see instances of winter injury due to a soil being too rich in certain elements of plant food such as nitrogen, but this, however, is very rare indeed. Lack of sufficient plant food is of much greater importance as a contributing factor in winter injury than an excess of plant food.

Heavy Production of Fruit During Preceding Season: Trees which bore a heavy crop of fruit in 1917 were more severely damaged than trees of the same variety or of the same hardiness which bore a light crop or no fruit during the same season. In Prince Edward County the writer saw a striking illustration of the relationship of heavy fruiting to winter injury. A Pewaukee tree had the unusual habit of producing a crop of fruit on a central leader branch in one year and the next year the lower lateral branches bore fruit. On this tree the central leader limb bore no fruit in 1917, and in consequence thereof appeared to be quite healthy when examined in 1918, while the lower lateral branches which bore a heavy crop in 1917 were nearly all dead.

In Northumberland County a Northern Spy orchard which bore a heavy crop of fruit in 1917 was badly injured during the following winter while another Spy orchard near by on practically the same kind of soil, was very slightly injured, due largely to the fact that but little fruit was produced in the previous season and partly to a sufficient supply of plant food.

Research work recently conducted in the United States shows that the hardiness of fruit trees is closely correlated with the presence in the trees of pentosans, substances which are similar to sugars and starches. It is thought that pentosans impart strength to the cell walls of plant tissues and that these cell walls have greater power of retaining moisture than the cells of plants which are relatively low in pentosans. In the ripening of fruits the sugars, starches and closely allied substances present in leaf, twigs and branches are drawn on rather heavily, thus lessening the supply of these materials which are supposed to impart hardness by their power to resist the drying out action of cold and strong wind. Experimental work done recently by Prof. Crow in Ontario, and by Dr. Roberts, in Wisconsin, indicate that it may be possible to change the fruiting habit of biennial bearing varieties by the

application of fertilizers and pruning. When this point has been more definitely established, it may prove to be a valuable factor in the prevention of winter injury to those varieties which generally bear alternately.

Hardy Stocks and Varieties: The problem of securing hardy varieties of good quality, and hardy root stocks or varieties on which to propagate or top work other desirable and less hardy varieties, is of greatest importance to fruit growers living in the northern apple growing regions of America. This problem has recently come in for consideration by several experiment stations in the United States and some valuable initial work has already been done. Much more remains to be done along this line, and some fruit growers are of the opinion that Ontario should undertake a comprehensive line of investigation and research work of the fruit stock problem. The growing of tree fruits in this province will not be placed on the most enduring basis until this problem has been satisfactorily solved. The writer had the privilege of spending one year in making a special study of the apple stock problem, while acting as research assistant in the Pomology Section of the Iowa State College. Some interesting and valuable data were obtained; partly by original investigational work and partly by correspondence with practical fruit growers and Experiment Station Officers in various parts of Canada and the United States. A summary of these data shows fairly conclusively that some good commercial varieties of apples can be more satisfactorily grown by topgrafting on hardy vigorous stocks planted for the purpose.

The varieties which are most frequently and favorably mentioned as being used for stock are as follows: 1. Hibernial, mentioned 154 times; 2. Virginia Crab, 136 times; 3. Tolman Sweet, 64 times. These varieties appear to have given the best general satisfaction over a wide range of territory than any other listed. In the middle Western States the Virginia Crab and the Hibernial appear to be the most satisfactory for the leading commercial varieties, e.g. Grimes, Jonathan, Delicious and the North West Greening, and in the Eastern States the Tolman Sweet seems to be the favorite for working with such varieties as the King, Spy, Cayuga, Red Streak, Baldwin and Cranberry Pippin.

Mr. David Tait, the pioneer horticulturalist of the northland, who lives at Iron Bridge, which is approximately in latitude $46^{\circ}15''$, has used the Hibernial very successfully as stock for the McIntosh, Golden Sweet, Niobe and Liveland. He believes the Darts Crab is even hardier than the Hibernial as a stock, and has attained good results with this variety as a stock for the McIntosh, De Cromcels, Liveland, Duchess, Dudley and Delicious.

The writer does not wish to be quoted as saying that hardy stock will make the scions of less tender varieties entirely hardy. Such a statement would not be correct, especially in the colder parts of the apple-growing parts of North America. In these sections scions of tender varieties worked on hardy stocks were injured during the test winter of 1917-18. Practical experience and experimental work show, however, that some of the less hardy good commercial sorts can be grown more successfully when top worked on more hardy, vigorous disease-resistant varieties.

The common nursery practice of using French crab roots for propagation purposes is open to criticism. French crab root stocks are not entirely hardy and often predispose apple trees to root killing on unfavorable soils or sites. Prof. Macoun of the Central Experimental Farm at Ottawa, found that standard apples grown on French crab roots suffered severely from root killing, but when worked on the roots of Siberian crab very little damage from this cause was noted. There

is some evidence to show that own-rooted trees are more desirable on account of the greater hardiness which is believed to be secured. Some economical system should be worked out of securing hardy root stocks for propagation purposes or of getting hardy varieties on their own roots to be grown either as stocks for re-working or for fruit production. As suggested above this work might very well be undertaken by our Experiment Stations and should be eventually adopted by our nurserymen after results of definite value have been obtained.

How to Prevent Winter Killing: We cannot regulate the temperature of the air or prevent winds from blowing, but we can, however, adopt means which may lessen the losses occasioned by unfavorable climatic conditions. The following suggestions of a practical nature may be worth consideration. These are not at all new but owing to recent developments have acquired a new emphasis.

(1) *Selection of Varieties:* In establishing new plantations plant only those varieties of good quality known to be hardy in your district. If possible secure own-rooted trees. Varieties of high quality which are susceptible to collar rot, sunscald, and crotch injury should be top-worked on hardy, vigorous, congenial stocks, which are resistant to these forms of winter injury.

(2) *Proper Soil Drainage:* All soils intended for the growing of tree or bush fruits or land already planted, should be thoroughly underdrained if not naturally or otherwise well drained. Good soil drainage is absolutely necessary and this point cannot be too strongly emphasized.

(3) *Protection Against Strong Cold Winds:* Orchard sites exposed to strong cold winds in the winter should be protected by a suitable windbreak on the north and west sides. This will materially lessen the damage caused by the drying out action of cold winter winds on trees and soil.

(4) *Regulation of Fruiting Habit:* Varieties which are heavy biennial bearers should where economically possible, have the fruit thinned to prevent an undue exhaustion of those materials which are required for the ripening of the fruit and which are also believed to impart hardiness to the tree.

(5) *Cultural Methods:* Where cultivation is given begin cultivation early in the season and cease cultivation at an early date say not later than July 1st, on most soils and for the majority of apple varieties. In peach orchards a little later, say up to August 1st, and on light soils in dry seasons it would be advisable to cultivate a little later than on heavier soils, in wet seasons.

(6) *Maintenance of Soil Fertility:* Apply sufficient fertilizers in the form of stable manure, commercial fertilizer or green manure or a combination of all to keep the soil properly supplied with those elements required for the best growth of tree and fruit.

BIENNIAL FRUIT BEARING IN THE APPLE

J. W. CROW, PROFESSOR OF HORTICULTURE, O. A. C., GUELPH

Biennial bearing is not a fixed characteristic of apple varieties. It is brought about by the development in some one year of blossoms on too large a percentage of spurs. Alternate bearing trees commonly show in their fruiting year fruit buds on from 60 to 90 per cent. of their fruit spurs. From 30 to 50 per cent. of these would be sufficient to produce a full crop. Growths on bearing Duchess and Wealthy trees are of six distinct types, based on their position and on the behaviour of their terminal buds.

(1) Weak leaf spurs, making 1-2 mm. of growth annually. So long as they make only this amount of growth they do not set fruit buds.

(2) Auxiliary leaf spurs, 1-3 mm. in length; produced as lateral growths on blossoming spurs. They rarely produce fruit buds in the season of their origin but normally do so the following year.

(3) Weak fruit spurs, 3-4 mm. in length. They blossom but seldom produce fruit.

(4) Strong fruit spurs 4-9 mm. in length. These bear nearly all the fruit. Individual spurs bear every second year and rarely blossom two years in succession.

(5) Extra long fruit spurs (or shoots). With some varieties shoots from 10-200 mm. in length, occasionally produce strong terminal fruit buds.

(6) Non-fruiting shoots of lengths varying from 10 mm. up to 500 mm. or more. The majority of the longer growths on a tree are of this nature.

The percentage (from actual count) of growths falling in each category is as follows:

TABLE No. 1

	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
	1-2 mm.	1-3 mm.	3-4 mm.	4-9 mm.	10-200 mm.	10-500 mm.
1. Alternate bearing tree, in on year.....	2-6	83-96	0	0-2	0	4-17
2. Alternate bearing tree, in off year.....	2-6	2-8	16-28	59-73	3-9	6-18
3. Annual bearing tree, (McIntosh).....	1-5	31-34	6-11	29-34	2-3	3-18

To secure annual fruiting it becomes necessary to stimulate the growth of the tree in the off year so that a considerable percentage of spurs which would normally produce fruit buds in that season will be forced into categories 5 and 6. Spur behaviour will then tabulate as follows:

TABLE NO. 2.

	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
	1-2 mm.	1-3 mm.	3-4 mm.	4-9 mm.	10-200 mm.	10-500 mm.
1. Starting with (on year)	2-6	83-96	0	0-2	0	4-17
2. Stimulated (by pruning) off year.....	1-3	1-4	7-11	18-49	4-6	21-44
3. Next year (estimated).....		30-40	30-40
4. Result is annual fruiting.....		30-40	30-40

We thus get a tree with two sets of spurs, each set of which produces fruit in alternate years. Our experiments show that this result cannot be accomplished by thinning of the fruit, but that it can be accomplished by *moderate heading back of small branches in the off year*. Our experiments show that it can also be accomplished by stimulating the growth of the tree with Nitrate of Soda in the off year. We have gotten good results from 4 lbs to a 12 year

old tree. The Nitrate requires to be applied very early in the spring for the reason that the large majority of fruit spurs have a very short period of growth (from 4 to 10 days). Our observations lead us to believe that 75 per cent. or more of the fruit spurs on Duchess and Wealthy have completed their growth for the season *by the time the first blossoms have well set on blooming trees of the same varieties*. Experiments in bud and blossom removal indicates that the date given is certainly the critical period of fruit bud formation for trees of the Duchess variety *in their on year*.

TABLE No. 3.
BLOSSOMING AS RELATED TO FRUIT BUD FORMATION

Branch No.	1919 Growth		Dates of Blossom Cluster Removal	Types of Growths Developed, 1920				
	Strong Fruit Spurs	Long Fruit Growths		Short Leaf Spurs	Long Leaf Growths	Weak Fruit Spurs	Strong Fruit Spurs	Long Fruit Spurs
1a	125	7	15-5-20	3	0	17	101	4
11a	110	8	18-5-20	5	0	21	83	4
12a	91	6	19-5-20	2	1	11	76	4
12b	121	12	20-5-20	7	0	16	89	3
1b	155	9	21-5-20	19	6	12	116	8
2	327	24	22-5-20	46	2	43	263	7
			First Blossoms Opened					
3	112	11	23-5-20	7	14	15	89	9
1c	130	8	24-5-20	6	0	19	98	13
1d	302	15	25-5-20	28	9	61	231	11
			Full Bloom					
11b	404	36	26-5-20	36	21	72	315	31
10a	129	16	27-5-20	43	7	17	81	9
10b	124	13	28-5-20	117	13	3	14	6
			First Petals Falling					
5a	117	5	29-5-20	110	27	13	2	0
			Fruit well set					
Total	2,247	170	79 % fruit buds.	429	100	320	1,558	109
9	118	13	31-5-20	128	31	0	0	0
7a	122	10	2-6-20	143	13	0	0	0
7b	105	7	5-6-20	116	18	0	0	0
4a	110	6	8-6-20	123	11	0	0	0
6	185	12	21-6-20	199	16	0	0	0
4b	209	11	check	236	17	0	0	0
5b	188	9	check	210	14	0	0	0
8	337	22	check	384	32	0	0	0
Total	1,374	90	100% leaf buds	1,539	152	0	0	0

Table 3 shows 79 per cent of fruit bud formation from spurs disbudded before that time and none whatever from spurs disbudded after that time. We suspect that no treatment can be applied after that period which will change the destiny of buds falling in categories 1, 2, 3 and 4 on either bearing or non-bearing trees.

These observations verify work done elsewhere, particularly by Roberts in Wisconsin, who is, however, of the opinion that with some varieties fruit bud determination may continue for several days after blooming is over. We plan to extend these studies and expect to find that with later varieties the critical period will be later than that stated herein for the Duchess variety. It would seem possible, however, to base on the information we now have, very definite statements in regard to annual bearing as affected by pruning, fertilizing, tillage and drainage.

It should be borne in mind throughout, that because of frosts, rains and other conditions beyond the control of the grower the number of blossoms produced affords a much more accurate basis for estimating the correctness of orchard methods than does the amount of fruit produced.

To secure annual bearing it becomes necessary to regulate with a considerable degree of accuracy the growth of the tree *in the off year*. In the light of our present knowledge it does not appear that any treatment can be given *in the on year* which will affect the desired result. Pruning, fertilizing, thinning and tillage *in the on year* all affect the size and colour of fruit but none of them seems to affect the set of fruit buds for the following season. They do, of course, necessarily influence the conditions of internal nutrition of the tree throughout the winter and early in the following spring. It is well known that a tree which has borne a heavy crop is more easily injured by a severe winter but the weight of evidence suggests that early spring growth conditions may, if they are favorable, very quickly overcome any handicap the tree may be under at the end of winter. We know that in heavy bearing varieties the tree is certain to set a large number of fruit buds in the off year. We know now that the question as to how many fruit buds and how many leaf buds will be produced is determined very early in the season—much earlier than we formerly thought. It is probable that bud differentiation begins (physiologically) very early in the spring and that the process is practically completed by blossom time or soon thereafter. Since our problem in securing annual bearing is to stimulate growth in the off year and thereby change into vegetative growth a percentage of spurs which would normally set fruit buds, any condition affecting early growth becomes important. It is remarkable, in this connection, that a tree will set fruit buds heavily in its off year in spite of serious neglect and even under conditions which would seem to be very adverse. This fact probably only verifies the statement that physiological differentiation of buds takes place very early.

It has been shown that pruning and also nitrate of soda may be made use of to stimulate growth. It is probable that in seasons of abundant early spring rainfall, it would be neither necessary nor advisable to use nitrate in any considerable quantity.

These studies also suggest very emphatically that thorough land under-drainage may under certain conditions be extremely important. It has been proven through long experience that root growth begins earlier on drained land. The roots of fruit trees are influenced directly by soil temperature and soil aeration, whereas the top of the tree is acted upon only by air temperature and sunlight. Early tillage likewise becomes a much more important matter than it has sometimes been considered. It is probably correct to say that where tillage is practised in fruit orchards, cultivation should begin as soon as the land is in fit condition to work. It may be stated that there is in this recommendation nothing new. In reply thereto I would point out that hitherto

we have lacked definite information dealing with these as well as with many other points in fruit growing practice. In my judgment we are now able to submit actual evidence drawn from careful observation and investigation and to base thereon intelligent and authoritative recommendations.

These studies also suggest that tillage after blossom time has no effect on the succeeding crop and should be therefore considered strictly in relation to the crop of the current season. There is well known and valid objection to late cultivation on the score of increased susceptibility to winter killing but it would appear that in general we might profitably discontinue cultivation much earlier than we have been doing. This thought carries with it a suggestion that perhaps under certain conditions orchards might be grown advantageously in sod. It is possible that the early use of nitrate of soda might overcome the most serious objections to this method of orchard practice, and make it possible for us to secure bountiful annual crops from sod orchards. We should expect to lose somewhat in regard to size of fruit, but would gain very materially in colour and would certainly gain very important advantages in regard to winter hardiness.

AN ONTARIO SALE AGENCY FOR APPLES

C. W. BAXTER, FRUIT COMMISSIONER, OTTAWA.

The fruit grower's problems are many and varied, probably more so than those of any other agricultural product. A great deal of time and money is spent in preparation for the season's crop, the size of which is determined to a large extent by the weather conditions obtaining during the short period at blossom time. The same amount of time and money is spent in preparation whether the crop is light, heavy or a complete failure; this is not a net loss, as the orchard is benefited by the care given it, and subsequent crops will return part of the outlay, but a portion is lost, and must be charged against the orchard.

As an apple-growing province, Ontario offers possibilities which are unexcelled by any other province in Canada. In fact, its geographic position provides some marketing advantages which are unattainable by other provinces. Its commercial producing districts are in the midst of the best of local markets, including Toronto, Ottawa and Montreal and many other cities and large towns; and in addition it is very conveniently situated for supplying the large consuming centres of the prairies; and the port of Montreal is also easy of access for the export markets.

The varieties which are of the highest quality and in greatest demand, both on the home and export markets, do exceedingly well, and can be produced at a cost not exceeding and in some cases less than in other provinces but, notwithstanding these possibilities and advantages, it cannot be said that the apple industry in Ontario has progressed to the same extent as in other parts of the country. This is by no means an indication that the apple growers of Ontario are less progressive than in other provinces—far from it. It is because the conditions under which apples have been produced here differ materially from other provinces where the industry is a specialized one, and where the grower's time is given practically altogether to this one line of endeavour. In Ontario, on the contrary, at least 75 per cent. of the crop is produced on mixed farms, and the grower's time is of necessity divided. Unfortunately as a result, on many farms, the orchard receives little or no attention, it being left entirely

to the tender mercies of nature, and no attempt being made to combat the numerous destructive insects and diseases which take a heavy annual toll.

In this connection we are not unmindful of the labour difficulties on the farm. These are always more or less in evidence and during the past few years have reached a serious stage but, if an equal portion of time were devoted to the care of the orchard as is given to other farm operations, the increase in production and the improvement in the quality of the crop would undoubtedly give average returns equal to, or greater than some of the other crops produced on mixed farms. There are some people who hold the view that apple growing and fruit growing in general is a highly specialized industry, and should not be a part of mixed farming. If we intend to follow the same methods of production and marketing as in the past, it would appear that this view is fully justified.

Notwithstanding the unsatisfactory results of the past season, the present condition of the apple industry in Canada and the United States is such as should warrant every care being given to all orchards, small and large, so as to produce the maximum quantity of high quality fruit.

It will be remembered that the returns to the grower from the heavy crop of 1912 were most unsatisfactory, which resulted in the conclusion that there had been over-planting, and that it would be unprofitable to give further care to the orchards. From this time on many orchards were neglected. Again in 1914, with a fairly large crop, the situation was completely disorganized owing to the outbreak of war, which was later followed by an embargo, against exportation to Great Britain. This resulted in further neglect and a lowering of the vitality of the trees to such an extent that many were unable to withstand the severe temperatures during the winter of 1917-1918. Practically the same conditions obtained in the States to the south, although perhaps in a lesser degree. The net result is that in so far as production is concerned, we are where we were at least twenty-five years ago.

The methods employed in harvesting and marketing the apple crop of Ontario are practically the same as those obtaining during the past twenty-five years. If these methods are satisfactory to the grower, there is no need for a change, but it is safe to say that only a comparatively few will agree that such is the case. There have been "off" years when the crop was light and no difficulty was experienced in marketing at profitable prices; the demand was equal to or greater than the supply; but with the recurrence of each medium or heavy crop, the results have been anything but satisfactory, and as outstanding examples of these unsatisfactory conditions we have the crops of 1912-14-16 and -20. The difficulty is that we have not been prepared to take advantage of the big crops.

It is not necessary here to go into details of the methods of harvesting and marketing the Ontario apple crop. These are well known but, in order to compare them with some of the other provinces, I shall refer to them briefly.

The bulk of the crop is graded and packed in the orchard under varying weather conditions, which are very often unfavorable, and by labour provided by the grower and obtained locally. No facilities being available for storing the packed fruit against frost, it is necessary to get the fruit packed and shipped within a very short period, depending upon the season. Owing to the limited time of employment, it has been difficult to obtain skilled labour, and growers have been compelled to compete with each other in securing labour, and to employ whatever local help was available, whether experienced or inexperienced,

more frequently the latter. These conditions are both unsatisfactory and expensive. They do not permit of the proper care and attention being given to produce a uniformly graded and properly packed output.

The methods employed in marketing have been various. When the crop is short, there is no difficulty in finding a profitable market. There is competition between local dealers and wholesale dealers in market centres but, when the crop is medium or large, there is comparatively little buying, and the only alternative has been to consign. Very soon the large centres become overstocked, while others are often under-supplied. The tendency of individual effort has always been towards large centres, and this is not surprising as there is not sufficient time to develop new markets, and the expenditure would be out of all proportion to the value of the crop.

One of the most outstanding examples of the unsatisfactory results of the present methods of marketing was in 1912, when a great portion of the crop was sold at \$1.00 per barrel and less. The crop, although large, did not at any time justify the acceptance of such low prices, which were the result of individual competition and the almost total absence of organized effort.

The past season, although different in some respects from 1912, is another outstanding example.

A small portion of the Ontario crop is also marketed through fruit grower's organizations, operating independently of each other and, although a few of these have been fairly successful, generally speaking individual co-operative effort has not worked out satisfactorily. There have been many co-operative fruit growers' organizations formed in Ontario during the past twenty-five years, but only a comparatively few of these are functioning to-day. The principal cause for the failure of these organizations is evidently their inability to successfully market the crops. In some cases the manager, who is also the salesman, has been selected from among the members, and, although successful as a grower, has not had the time nor opportunity to gain sufficient marketing experience to dispose of the product to the best advantage. To engage a fully qualified salesman, who would devote all his time to the work, would be to incur an expenditure out of proportion to the value of the crop.

The methods employed in harvesting and marketing in Nova Scotia and British Columbia are very different from those in vogue in Ontario. The bulk of the crop, instead of being graded and packed in the orchard, is hauled by the grower to the packing house, which has been specially equipped for the work, and where it can be done at a minimum cost. This method is followed both by fruit growers' organizations and dealers, and the work performed by employees who, having fixed standards to guide them, are able to obtain uniformity in the pack which is not possible where the work is done in the orchard. Even inexperienced help very soon becomes efficient under the central packing house system. When necessary, employees can be moved from one packing house to another, and the longer period of employment under this method is a further inducement to engage in the work.

In regard to marketing in Nova Scotia and British Columbia, the satisfactory results of centralized endeavour are so well known that they need scarcely be referred to. There are, however, one or two outstanding examples of what has been accomplished that are worthy of note.

British Columbia's natural market, by reason of her location, is the prairie provinces, where there is keen competition from the Northwestern States, whose growers are also well organized. British Columbia growers did not feel secure

in depending upon the prairie markets to take their crop against this competition and they have therefore established sales agencies in many large centres and brokerage connections where they have not their own representatives, so that they no longer feel they must meet the prices of their competitors on these markets if not satisfactory.

Similar results have been obtained by growers in Nova Scotia through centralized endeavour. In 1919, with a crop of approximately one and three-quarter million barrels, they were able to find a profitable market in the United States for approximately 500 cars of low grade and cull fruit, for which there was no market in Canada, and this would have been impossible had there been no central selling agency and no co-operation between growers' organizations and dealers.

Transportation is not among the least of the fruit grower's problems. If adequate facilities are not available to move the crop at the proper time, all energy and money expended in production will have been in vain.

Ontario has always had more or less difficulty in securing a supply of refrigerator cars in big crop years, and last year was no exception. Especially is this the case for shipments to the prairie provinces where refrigerator cars are required early in the season. There has been no co-operation between shippers to cope with this problem; each has acted independently of the other.

The transportation companies are not without their responsibility in providing an adequate supply of suitable equipment, but this responsibility can be more definitely fixed when growers anticipate their requirements well in advance of the shipping season, and so advise the transportation companies.

Nova Scotia and British Columbia growers and shippers have accomplished a great deal through their shipping and traffic associations. Last year when contracts for Ontario apples were being cancelled owing to the inability of growers and shippers to secure cars, British Columbia through the traffic association, co-operating with the railway companies, had an ample supply. The shipping and traffic organizations in both these provinces are composed of fruit growers' organizations and dealers.

One of the most outstanding examples of what can be done by concerted effort was accomplished by the Nova Scotia Shipping Association about two months ago. The market for apples in the United Kingdom had for some time been weakening and prices had dropped to where it was unprofitable to ship unless something could be done to offset this decline. The regular steamship lines were asked to lower the ocean freight rate, but could not see their way to do this. The Association then sought to charter fifteen steamers for straight cargoes, and in this they were successful, and at a rate approximately \$1 per barrel cheaper than the rate then being charged. Not only did this benefit the members of the Association, but other shippers as well, as the regular lines subsequently lowered their rate .75c. per barrel.

The Fruit Branch has endeavoured to render every assistance possible in fruit and vegetable transportation, and our experience in this work has shown that one hundred-fold more can be accomplished where the growers and shippers are well organized.

I have endeavoured to outline briefly the methods employed in other provinces in marketing the apple crop and the results obtained and to compare them with those of Ontario. And this brings us to the point of asking, if a selling organization and a transportation organization are essential to the success of the apple industry in other provinces, are not these equally essential

to the success of the industry in Ontario? It is my opinion that they are even more necessary, and furthermore that the fundamental principals and methods governing these are adaptable to Ontario conditions. It is true that the area served by these organizations in British Columbia and Nova Scotia is considerably less than the apple growing area in Ontario, but this should not mean any insurmountable difficulty. It will be noted that in both British Columbia and Nova Scotia, the shipping and traffic associations are separate from the marketing organizations. The shipping associations, composed of growers, selling organizations and independent fruit shippers and dealers, have but one objective, namely, improved transportation and all that that term stands for. The growers and shippers realize that unless they are in a position to solve the many transportation problems, they cannot succeed in marketing.

There are in Ontario to-day approximately fifty fruit growers' organizations, thirty-five of which have confined their operations to apples only. Several of these have not been active in marketing for a number of years. Very few, if any, handle the fruit through a central packing house, the work being done in orchards or in buildings on the premises of each member, and each organization marketing its fruit independent of the other, with more or less success.

While independent co-operative organizations offer some advantages over individual effort, it is practically impossible for these to successfully compete with other provinces and districts where growers are thoroughly organized and have established an efficient central selling association. In view of this growing competition, one hesitates to recommend the further organizing of growers into independent units until there has been established a central selling organization with which they can affiliate and to which they can turn over their product to be marketed.

The tonnage of the organizations now in existence, if centralized, is sufficient to warrant the expenditure necessary to establish an efficient and economical central selling organization. The greater area covered by these units might necessitate the establishing of two sub-centrals, one in eastern and one in western Ontario, both under the control of the central.

Standardization is essential to the success of such an organization. We have certain grades that have been established by Federal legislation which have done much to advance the apple industry, but these are only minimums and permit a great variation in values packed within the grade requirements.

By the establishment of brands which represent specific qualities and which are uniformly present at all times, the grower who produces the highest quality of fruit is assured of receiving returns accordingly. This also establishes confidence with the trade, and permits trading at long distances.

In addition to the establishing of brands, the central would establish sales agencies in sufficient numbers to obtain the widest possible distribution, anticipate the requirements of its members with respect to supplies, estimate the crop, and be prepared to quote prices well in advance of the dates of shipping, co-operate with the transportation companies in the matter of car requirements, in order that a sufficient number of cars may be assembled within an accessible area, and direct the operations of the local organizations with respect to harvesting and shipping.

In conclusion, I would say that the possibilities for successful and profitable apple growing in Ontario are unsurpassed by any other province. The present condition of the apple industry is such as should warrant every care being given our orchards but, if Ontario is to take full advantage of these possibilities and

present conditions, there must be a change in our present methods of packing and grading. The apples must be handled through central packing houses, and marketing centralized. The trend of prices for agricultural products has been decidedly downward of late while the cost of production has not shown a corresponding reduction. It is necessary, therefore, to reduce the cost of production to a minimum, and to obtain the best results for the production. This has been accomplished by growers in other provinces and districts by co-ordination and centralization of marketing, and I am confident that it will be equally successful in Ontario.

THE ONTARIO NURSERY CONTROL ACT

W. J. BRAGG, M.P.P., BOWMANVILLE.

I do not intend at this meeting to make an address. I am simply going to outline some of the clauses of the Act, and I desire that this shall take more the form of a round-table conference than anything else. We have this afternoon both nurserymen and fruit growers, and I am sure you will all be interested in what may come out in the discussion.

In forming this Act, there was no thought in the minds of anyone that it was going to injure the nurseryman, but shortly after the Act was formed and introduced in the House, we found that the nurserymen were taking very strong exception to some of the clauses, and in the different stages, the Act received very severe criticism, so much so that we thought it advisable to withdraw the Act at the last session. I have with me a number of copies of the Act as it was presented to the House, which will be distributed among you.

One reason why we took this matter up and gave it so much consideration was that our friends to the south of us had, in almost all the apple-growing States of the Union, similar legislation with regard to nursery control. In order to show you the interest that has been taken in this matter, I would like to read to you a number of letters which were sent in to myself and the Department of Agriculture from the Fruit Branch in connection with this matter. I received some very strong letters of criticism after this Act was introduced, and I also received some very complimentary letters. The Horticultural Association of the Province of Ontario at their convention held last week in Toronto took this matter up, and although they are not particularly interested in fruit growing of any kind, they felt that something along the line as laid down in this resolution was of very much importance. The resolution reads as follows: "That the Ontario Horticultural Society requests our Legislature now in Session to introduce such legislation to punish misrepresentation and deception in the sale of such trees, scions, bushes and vines as are grown for commercial and domestic purposes, so that the purchaser and grower may be fairly protected from fraud, and that copies of this resolution be forwarded to the Premier and the Minister of Agriculture," etc.

The farmers in the Province of Ontario have complained that nurserymen have come to them and sold stock at fabulous prices, and they found out later that the stock was the very cheapest and not fit for growing at all.

There are some clauses in the Act which I think are rather objectionable, and possibly it would not be amiss to just read the Act and then take it up clause by clause. The fathers of this bill had not anything in their minds in any way affecting our own nurserymen; it was more to protect our people from the

foreign nurseryman, and I think we should do all we can to protect our own interests on this side of the line. I think some legislation along this line is highly advisable.

A MEMBER: I can see nothing for it from a nurseryman's standpoint except that there will be a very material advance in prices. My opinion is that the seven year clause is quite sufficient because with the best commercial varieties you can tell at the end of six or seven years whether you are getting a tree true to name. If a man has ever planted an acre of orchard and has planted ten Spy trees, he will know whether he has planted a Spy or not when he has planted it.

There should be a particularly strong clause in this Bill as to the importation of foreign stock, and it has been suggested that the bonding of the dealer who is selling foreign stock should be heavier than that required of the Ontario nurseryman. If a foreign nurseryman is coming to Ontario to sell stock, he must lay his catalogue and price list before the Department of Agriculture for the Province of Ontario before he is allowed to go out and make a sale. Men who are dealing in nursery stock in Ontario have their honor at stake, and they will not deceive the grower; they cannot afford to, and I feel that something should be done to protect the growers in this country against these foreign nurserymen.

I would like to name a committee composed of fruit growers and nurserymen as follows to consider this bill and redraft it for presenting again to the Legislature, and with your permission I will nominate MR. BAILEY (E. D. Smith & Son); MR. WELLINGTON (Stone and Wellington); and E. O. PLUMB (Brown Bros Co.); J. E. JOHNSTON, Simcoe; H. T. FOSTER, Burlington; W. H. GIBSON, Newcastle; P. W. HODGETTS, Toronto.

The committee as named was accepted, Mr. Hodgetts being named as convener.

CARRIERS' PROTECTIVE SERVICE

By G. E. McINTOSH, FRUIT DIVISION, OTTAWA.

Neither the time of this Convention nor the patience of those in attendance would permit me to review in detail the many transportation problems with which the Fruit Branch has had to deal during the past season. I can only assure you there has been no slackening in our efforts with the railway executives, the steamship companies, the express companies and the Board of Railway Commissioners, in cultivating a closer co-operation, and a clearer understanding of difficulties between operating and traffic officials and the shippers, for better service.

One of the problems which it is necessary to solve, particularly in this period of reconstruction, when the consumer is looking for a downward trend in the cost of living, is that of preventing waste of foodstuffs. The introduction of a carriers' protective service by Canadian Railways will go a long way towards solving this problem.

By such a service the carriers would accept shipments of fruit and vegetables, say from October 15th to April 15th, inclusive, assume, apart from the liability now provided for negligence and omission in transit, full liability for loss or damage by frost or over-heating, and for such a service the carriers would be permitted to assess such charges as may be agreed upon between the carriers and the shippers, or as may be ordered by the Board of Railway Commissioners.

It is impossible to estimate the loss and waste that occurs each season from frost or over-heating in transit. That it is tremendous is conceded by everyone concerned, especially when we consider the enormous tonnage of perishables that is required to be transported during the cold periods. About 90 per cent of the Ontario apples are moved under these conditions. One railway alone handled 4514 heated cars on Western lines during the season of 1918-19. The service now available—that is to say a heated refrigerator car service on a mileage basis—is fairly satisfactory for short-haul movements, but it is not satisfactory for the long-hauls and the carriers have not so far suggested any improvement for this traffic. I believe, however, they are interested in this matter, but require to collect data upon which they can base reasonable charges.

One instance occurs to me which may throw some light on the amount of loss that is resulting each season from frost or overheating. Sixteen car-loads of Canadian apples, moving to one consignee, on which claims were presented for damage, amounted to \$5,892, or approximately \$1.60 per barrel. The shipper claimed the damage occurred somewhere between shipping point and destination, and it is generally conceded that a modern refrigerator car, properly cared for under heat, will safely transport perishables during severe cold weather. One Ontario shipper in referring to the present service states:—"We have this day a telegram from consignee on a heated car of fresh apples that went out from a Dominion Atlantic point along with another car. The one has arrived cooked and the other frozen."

It is true, cases such as cited are the subject of claims, and eventually no doubt, are paid. That is not the point, however. Few, if any, fruit producers or shippers wish to sell their product this way. It is most unsatisfactory to bring fruit to the stage of marketing and have it damaged in transit. A carriers' protective service would place definitely the responsibility for such loss, and would assure proper care in transit. It would be as beneficial for the carrier as the shipper. The carrier wants the full earnings of the traffic, and the shipper certainly does not want to be compelled to file claims.

It is recognized, I think, by the fruit and vegetable interests both in Eastern and Western Canada, that a carriers' protective service would be a service distinct from the freight transportation service, and would be something for which there would properly be a separate charge. The carriers would become the insurers, and the charge should be something in excess of the actual cost of the service, but in proportion to that charged for a similar service by railways operating in the United States, and recently adopted on recommendation of the Interstate Commerce Commission. It should not be an out-of-pocket service for the carriers.

For several years, up to and including 1919, a form of carriers' protective service, known as Option 2, was in effect from the Northwestern States, Washington, Oregon, Idaho and Montana, to various States as far east as Illinois, and to points on the Canadian Pacific, Canadian Northern and the Grand Trunk Pacific in Western Canada. In fact the rules of certain carriers governing heated car service, provided for the protection of perishable articles from loss on account of frost, freezing or over-heating, under two so-called Options: (1) The shipper furnished the service and assumed all responsibility for loss not the direct result of actionable negligence of the carrier; and (2) the carrier, at the request of the shipper, furnished the service and was liable for

loss not the direct result of actionable negligence of the shipper. When the carrier furnished the service the charges per car in addition to the transportation charges, from Washington points were as follows:

Alberta points.....	\$18 00
Saskatchewan points.....	21 00
Manitoba points.....	24 00

In the general revision and consolidation of the perishable protective services in the United States, about a year ago, the Canadian roads withdrew from participation in any protective service against frost, so that on international traffic the carriers' protective service is now offered only on that portion of the haul within the United States and to Great Northern and Northern Pacific points in Manitoba.

Effective March 1, 1920, American carriers, as a result of recommendation by the Interstate Commerce Commission, published what is known as Perishable Protective Tariff No. 1. This Tariff contains under one cover practically all of the rates, rules and regulations governing the handling of perishables from and to all points. In connection with this the carriers formed what is known as the National Perishable Freight Committee, and with this committee the shippers may file complaints and adjustment proposals which are listed for a public hearing. If a satisfactory adjustment cannot be arrived at, the shipper still has the right of appeal to the Interstate Commerce Commission.

There is a feeling of dissatisfaction among the handlers of fruit and vegetables throughout Canada over the present regulations governing the movement of these commodities during the period for which a heated car service is required. Previous to the Fall of 1916 the charges for a heated car service, for fruits, were absorbed in the freight rate, or the carriers may say it was a special service for which they received no remuneration. In any event, an additional charge of 1 cent per car per mile, minimum \$2, became effective at that time, which has since been increased to 1½ cents per car per mile.

With the introduction of the heated car service shippers expected the railways would assume the risk of damage. They say the railways are selling a certain service to the public and the responsibility of risk for the safe transportation of the goods should be definitely assumed by the carrier and should not be left to the shipper, dependent upon claim proceedings or upon any uncertain or indefinite rule. In answer to this the carriers say the heating of the car is an expense never considered in the line-haul rate.

At a sitting of the Board of Railway Commissioners in Ottawa, January 7th, 1920, in answer to an inquiry as to whether, under present conditions, the carriers accepted the risk, the representative of the Canadian Pacific Railway Company made it quite clear that they did not.

It was on this occasion that the proposition for a carriers' protective service in Canada was first brought to the attention of the Board, it being submitted on behalf of the fruit and vegetable shippers of the Dominion that the charges then in effect for heated refrigerator car service were ample for the service given; that the railways in Canada should be required to furnish a carriers' protective service for long-haul shipments; and that shippers would not object to reasonable charges, provided the responsibility of the carrier was clearly defined.

The Chief Commissioner intimated that an important question had been raised and one which had his hearty sympathy if it could be worked out properly. It was further suggested that interested parties should make a formal application

to the Board. This has recently been done by the British Columbia Traffic and Credit Association, in behalf of the fruit and vegetable shippers of that Province. The application is for an order of the Board, requiring Canadian carriers of British Columbia fruit and vegetables to provide a service such as outlined. This has been supported by the Western Canada Fruit Jobbers' Association, with a suggestion that it be made applicable to all Provinces.

If Ontario shippers feel that it is in their interests to have a carriers' protective service, support should be given the application and a request made that the service be available for similar shipments from this Province.

In the evidence at Vernon, B.C., it was submitted that the way to provide against the risk of damage by frost or over-heating is through insurance; that the regular insurance companies have no provision for this type of risk, and both Canadian and American companies had declined to consider the business. It is unquestionable that as the carriers furnish the equipment, furnish the heating service, and have the shipments under the personal oversight of their employees at all times, they are the logical party to undertake the insurance. This question was fully considered in the Northwestern States, and resulted in the carriers voluntarily undertaking the service and further voluntarily continuing it after four years experience.

Statements filed with the Interstate Commerce Commission show that in the case of perishable freight moving to some 26 wholesale houses in Western Canada during the period of October 15th to April 15th, 1917, the percentage of claims paid to freight charges was 2.48 per cent and the percentage of all claims filed to freight charges was 2.77 per cent. This, it will be noted, was a period during which the carriers' protective service was in operation, and the percentage of claims filed to freight charges was very low.

The Interstate Commerce Commission says:—"No method seems to be open to the carriers to avoid claims for damages arising from the freezing of potatoes in winter, except by offering a protected service at reasonable rates and under their own full responsibility for the results, giving the shipper at the same time the right, without additional charge, to assume the liability himself by providing his own protection, the carrier to remain liable, of course, for any loss or damage resulting from their own negligence."

Further—"The alternative rule suggested by the defendant carrier, and now published in the tariff with this Commission, is in our opinion fair and reasonable, in that it allows the shipper a choice between shipping his traffic at a lower rate under a special contract, by which he becomes his own insurer against weather loss and damage, or making his shipments under terms imposing the full responsibility upon the carrier."

In suggesting that Canadian carriers become insurers there is no new principle involved. The Canadian classification provides that in the case of a shipper declining to ship at "Owner's Risk" any article shown to be so carried, the articles will be carried subject to the terms and conditions of the bill of lading at "Carrier's Risk," on payment of 25 per cent. over and above the rates specified. The carrier thereby undertakes to accept the risk of weather, or as the case may be. It is accordingly the insurer. The principle is therefore not new and should not in any way conflict with railway operation.

It has been suggested that this provision in the classification covers the situation. That is not the case, except where commodities are moving under class rates. Fruit and vegetables, as you are aware, move under special commodity

tariffs and at these rates do not share in the service provided by this classification regulation.

It would not be 25 per cent on the commodity rate, but 25 per cent on the class rate. For instance, under this regulation, a carload of apples from an Ontario point to Winnipeg, would cost the shipper, in addition to the regular freight charges, the difference between the class and the commodity rate, plus 25 per cent on the class rate, a total of \$186.90 per car, or 15.1 cents per car mile, if the shipper insisted upon a bill of lading without the notation "Owner's Risk." It may therefore be said there is no protective service offered for the fruit and vegetable movement, because the additional charges are more than the traffic will bear. "All that the traffic will bear" is a good thing for the railways, but "more than the traffic will bear" is a bad rule for everybody.

For comparison reference is made to the following figures showing the relationship now existing between the commodity and class rate for apples from Ontario points to representative receiving points in Manitoba and Saskatchewan:

APPLES—RATES IN CENTS PER 100 LBS.

Destination	Mileage	Com. Rate	Class Rate	Class Rate Plus 25%	Difference per 100 lbs.
Winnipeg.....	1,232.4	92	123.5	154.3	62.3
Portage la Prairie.....	1,288.0	105	131.5	164.3	59.3
Brandon.....	1,365.5	112	137	171.0	59.0
Moosomin.....	1,631.1	118½	154.5	193.1	74.6
Regina.....	1,768.0	137½	167.5	209.3	71.8

The difference in charges is from 59 to 74.6 cents per 100 lbs. A comparison with the rates effective for a protective service for similar distances over United States lines, which are approximately from 7 to 10 cents per 100 lbs., indicates the relationship between these charges and what American railroads consider practical for shipments of a similar character.

Assuming that the classification did permit fruit and vegetables to move at commodity rates, plus 25 per cent. for a clean bill of lading without notation "Owner's Risk," the result would be as follows, on shipments from Ontario points.

Destination	Miles	Com. Rate	Com. Rate plus 25%	Difference per 100 lbs.
Winnipeg.....	1,232.4	92	115	23
Portage la Prairie.....	1,288	105	131	26
Brandon.....	1,365.5	112	140	28
Moosomin.....	1,631.1	118.5	148.1	29.6
Regina.....	1,768	137.5	171.8	34.3

The difference in this instance is from 23 cents to 34.3 cents per 100 lbs., as compared with from 7 to 10 cents per 100 lbs. for corresponding distances under the protective tariff effective on American lines.

The application therefore now before the Board of Railway Commissioners, (and it should probably be decided at this meeting whether it will have the support of Ontario shippers) is for a carrier's protective service such as will

give a measure of stability to the fruit and vegetable business in a direction in which these industries, so far as winter marketing is concerned, are now practically at the mercy of the weather and the carriers.

In presenting the case for the British Columbia shippers, it was pointed out that it is not the actual loss on any particular shipment that is the real concern, but rather the element of risk, which debars the distributors from purchasing as freely as the production and consumption demands. The application is to secure a working arrangement that will meet the situation. The service should be available from October 15th to April 15th, inclusive, each season, and effective from and to such points as trade conditions demand.

It would be more or less experimental for a time at least, and if granted, either voluntarily or by an order of the Board of Railway Commissioners, the charges should be sufficient to show the carriers fair results under average conditions, and at the same time not too high to be a service.

The general opinion is that the charges should be on a flat basis. That is to say, shipping territory should be blanketed, and rates fixed to destination by provinces. This is a matter which should have careful consideration. Charges at present in effect between points in the United States are arranged in a similar way.

The following schedule shows the charges for a carriers' protective service from Wenatchee, Wash., to different states also the heated car service rate from Ontario points to points of similar mileage, at "Owner's Risk":—

From	Rate Basis	Mileage	Charge Per Car
Wenatchee to Glacier Park, Mont.	5c. per 100 lbs. all West. Montana.	529	\$17.50
Sarnia to Montreal.	1½c. per car per mile.	505	7.50
Wenatchee to Glasgow, Mont.	6c. per 100 lbs. all East. Montana.	858.3	21.00
Forest to Fort William.	1½c. per car per mile.	860.1	12.90
Wenatchee to Northgate, N. D.	7c. per 100 lbs. all N. D.	1,168	24.00
Clarkson to Winnipeg.	Flat rate from points West Montreal.	1,248	16.50
Wenatchee to St. Paul, Minn.	8c. per 100 lbs. all Minn.	1,610.4	28.00
Clarkson to Regina.	Flat rate from West of Montreal.	1,590	22.50

Deducting the present charges for heating, which Canadian Railways say is a just and reasonable charge, and which has been authorized by an order of the Board of Railway Commissioners on request of the carriers, would provide, if applied to the American traffic, an insurance fund of roughly \$9.00 per car to Montana points; \$6.50 per car to North Dakota points, and \$4.00 per car to Minnesota. It is doubtful if this is sufficient to protect the carriers. On the other hand the American railroads were recently refused authorization of proposed increased charges for the service.

British Columbia shippers, through the British Columbia Traffic and Credit Association, are on record before the Board of Railway Commissioners as favoring charges as follows:—

Alberta points.	\$30.00 per car
Saskatchewan points.	40.00 per car
Manitoba points.	50.00 per car
Ontario points.	60.00 per car

Deducting the present heating charges of $1\frac{1}{2}$ cents per mile, this would provide an insurance fund roughly as follows:—

Alberta points	\$22.00	per car with average haul	530 miles.
Saskatchewan	27.50	" " "	830 "
Manitoba "	33.00	" " "	1,130 "
Ontario "	36.00	" " "	1,600 "

The charges suggested by the British Columbia shippers are approximately 64 per cent. higher than those proposed by American carriers, but refused by the Interstate Commerce Commission for lack of substantiation, and nearly 100 per cent greater than the charges now effective on American lines.

In asking the railways for a service which entails increased operating costs, we must consider that while gross earnings of Canadian railways were stimulated by the recent rate concessions, nothing appears to have happened of a favorable nature in respect to net earnings. As a matter of fact they have actually declined. Adequate service can be provided only in two ways: out of earnings, or by borrowing. If a carriers' protective service for perishable food-stuffs is a necessity in Canada, and I agree with the finding of the Interstate Commerce Commission where they state:—"We are convinced that there is a vast opportunity in protective service against both heat and cold for conservation not only of carrier revenues, but of food products of the nation"—then we should be willing to pay a charge which will protect the carrier against loss and assure an efficient service. It would appear, however, even though the risk may be a trifle greater on Canadian traffic, that a charge of nearly 100 per cent. greater than that which the Interstate Commerce Commission evidently think is just and reasonable in territory somewhat similar, would be a rather generous attitude to assume. The Western Canada Fruit Jobbers' Association have suggested, considering the trifle more hazardous territory covered in Canada, the rate here should be approximately 25 per cent. above the American rate. Whatever the charge may be, it should be fixed on a per 100 lb. basis for certain mileage areas.

The references thus far relate to shipments moving in insulated or refrigerator cars. There must always be a proportion of the fruit and vegetable tonnage moved in box cars. It is not always possible for the carriers to supply insulated cars. This is a serious matter for the industry, as the risk of damage by frost is present with box car shipments from the early part of October on. If a considerable portion must move in this class of equipment, then some arrangement for protection should be worked out. The only practical way perhaps, would be for the carriers to supply lined box cars when refrigerators are not available, and provide the protective service, at a very slight advance, if any, over the rate charged on insulated, or refrigerator cars.

The question of responsibility of the carriers to furnish proper equipment for the commodity tendered enters into this phase of the matter, therefore careful consideration of this point is suggested.

It would appear, under the rules provided in Perishable Protective Tariff No. 1, which governs shipments moving under carriers' protective service in the United States, that the carrier is wholly liable for proper equipment no matter what equipment the shipper accepts in lieu of what he orders.

Rule 80 of this Tariff reads:—

“(a) On carload shipments shipper must declare in writing in shipping orders and in bills of lading at loading station whether or not the shipments are tendered for transportation, under refrigeration, non-refrigeration, icing, ventilation or under protective service against cold.

Note—If the shipper, under the provisions of Rule 35, orders a car of a particular type and specifies the type of service desired, in accordance with Rule No. 80, and the carrier is unable, within a reasonable time, to furnish the type of car ordered, the shipper may accept a car of another type without waiver of his right to the kind of protective service which he has specified.”

Whether a carriers' protective service should be optional or obligatory on the tariff, is an extremely important matter for consideration. Personally, I think the service should be optional. The present mileage-heating service at “Owner's Risk” should be retained. It might be that a large number of shippers would not want to pay an additional rate for the insurance; they might prefer to carry the risk themselves. The American lines, after four years, are retaining the optional feature of their service, and Canadian shippers should not be deprived of the privilege of carrying their own risk if they wish to do so.

Briefly, the request of the shipper to the carrier is:—“We want something reasonable, and are willing to pay a reasonable charge for it.”

A MEMBER: What is the minimum now?

MR. MCINTOSH: 30,000 lbs. It is now 35,000 on shipments from British Columbia to the Prairie Provinces.

MR. JOHNSTON: I do not think our business will stand the high freight rates that we have to pay at the present time. Some arrangements will have to be made whereby the products of the orchard will be carried safely and arrive at their destination in proper time. We all know that when we ship in iced cars the companies do not carry out their contract and keep the cars well supplied with ice, because our fruit does not always arrive in proper condition. I think we should have some protection in that matter.

Moved by MR. CHAPIN, seconded by MR. JOHNSTON:

“That the following members be a committee to meet at seven this evening to consider the matter of freight rates and transportation generally and report: Messrs. Maycock, J. E. Johnson, Bragg, Lick, Scripture, McIntosh, Chapin, Foster, Jemmett, Blaikie, Bunting, Drysdale, Carpenter and Bailey.”

MR. MCINTOSH: The Niagara Fruit Growers' Association in co-operation with the Ontario Fruit Grower's Association took every possible opportunity to protect their interest before the Railway Commission in the Express Rates case. Several representatives were sent to Ottawa to attend at the final sitting, and I can say that it was largely due to the representation from the growers that we have been treated as fairly as we have in the order of the Board. The Express Companies asked for an increase of 40 per cent., and they were only allowed 20 per cent. on fruit, and to my mind that was very reasonable consideration. It is the first increase in express rates, and I think the fruit industry has been well taken care of.

THE MARKET SITUATION IN GREAT BRITAIN.

HON. MANNING W. DOHERTY, Minister of Agriculture, Toronto.

I am intensely interested in the fruit industry, although I am not a fruit man, being practically altogether in the business of live stock, having only four acres of bearing orchard and four acres coming in; but I have for years watched

the development of the fruit industry in this Province. When at the Guelph College back in 1895, and up until 1904, I realized that a great deal of effort was being expended by that institution and its staff and the Federal Department in their attempts to develop the fruit industry in this Province, and I am free to say that I have from time to time been a little discouraged in regard to the real progress which the fruit industry was making in the Province, considering our natural advantages. I have all along felt that possibly in this branch of our industry, as in other branches of our industry, that we have been devoting too much time—or shall I say, not enough time, to one end of the problem, and consequently forced to devote too much time relatively to the other end. Back in the years gone by, the efforts of the institution were practically directed to telling fruit growers how to grow fruit. This was good work, necessary work and a valuable work, but it is only possible to make progress to a certain point unless you provide the other end. I have all along felt that we have given too little attention to the marketing end of our business and too much to the production end. If you create a situation where the demand is in excess of the production, and where it is possible for those engaged in that line of industry to depend each year on a reasonable profit upon their investment, if you in other words stabilize the industry you won't have the same difficulty in disseminating any information which you want to spread around, and you won't have to shove your technical knowledge down the throats of the people in the industry, because if you make it profitable they will seek after it. I feel that the Federal and Provincial Governments should leave nothing undone to provide every proper facility for the marketing of our crop.

Our fruit industry starts early in the Spring, and at first the fruit comes gradually but in a very few weeks the rush of fruit is on. We have been conducting the industry every man for himself and the fruit is tumbled on to the market here, there and anywhere during the rush season until it tapers off in the Fall. As a result a lot of fruit reaches the market, some in good condition and some in poor condition and a quantity is lost between the orchards and the consumer. To my mind we should take a lesson from the lumberman and build a dam or two so as to regulate the flow and so that the fruit will reach the consumer, no matter where he may be situated, and so that our fruit will be evenly distributed according to the powers of absorption and consumption at every point.

This can only take place and be accomplished by co-operation and organization, and I look forward to a few years of life yet, and I hope to be able to live long enough to see the fruit industry in this Province in such a position that there will be no glutted season and so that there will be no glut in Toronto today, and Kingston bare of fruit. So that there will be no glut at Montreal, and no fruit in Port Arthur or North Bay, and so that there will never be a time that we will have hundreds or thousands of dollars' worth of fruit not marketed at all because the channels of trade cannot take care of it.

While I am a firm believer in the possibility or potentialities of co-operation, I am of the opinion that the most successful co-operative organizations that are in existence anywhere in the world are those that are conducted by those actually engaged in the business and not from Government aid. I believe it is a duty of the Federal Government and the Provincial Government to do everything in their power to assist in these organizations, because it is a matter of national importance.

I would like those who are not engaged in the fruit industry to realize that it is never an advantage to the consumer of natural products to have that product placed at his disposal below the cost of production. That statement might need a little argument to prove, but if I had time I could prove it to the satisfaction of any reasonable man. If the consumer buys a basket of peaches for 25c. that costs 50c. to produce, he thinks he is making 25c. but he is not, because that price reflects back on the industry and there is going to be a day that he will have to pay that 25c. and more; because the supply will decrease to a point where he will have to pay a great deal more.

I had the pleasure of spending a few weeks in the Old Country last Fall, and I was very anxious to acquaint myself with the situation over there. I have placed over there as our Agent-General a man who is intimately acquainted with all branches of agriculture in this province. In certain seasons of the year the efforts of the staff there, are directed towards emigration. There is a portion of the year when I have felt that their efforts and services could be very well used to further the development of trade in our agricultural products in the old land; because I realize that we have over there a market that can take all we can produce for years and years in this country, no matter how rapidly we may develop. That is true not only in regard to fruit, but is also true in other lines of agricultural products. Our staff over there should be used to develop a market for agricultural products. The Federal Government have officials over there, but they have the whole Dominion to look after and Ontario is looked upon as a kind of big brother that can stand on his own feet and the officials of the Federal Government feel that the less wealthy provinces have first call upon their services.

I was astonished when over there to see the degree of perfection to which the Governments of other countries had developed their system of marketing. The system of marketing of New Zealand, Australia, Denmark and Ireland are wonderful and in their development they have spent considerable money and effort. Their product goes on the market graded to a nicety. Their grade is always absolutely reliable. If you buy a ton of New Zealand butter of whatever grade it may be, you can ship it to Glasgow and you can be sure that you have got exactly what you bargained for. The same is true with regard to New Zealand mutton. The New Zealand mutton was formerly handled by private concerns anxious to make dividends and who were not so keen to see that the product was up to the market. This was carried on to such an extent that New Zealand found herself face to face with the loss of their trade in chilled meat, and she sent to England Sir Joseph McKenzie, who had formerly been Minister of Agriculture, and he spent seven years in England and he got the New Zealand trade back on its feet, and to-day they watch the quality of the product and no private concern is allowed to put carcasses on the market that will injure the quality of their mutton and lamb. We have got to take some such steps. I have had a great admiration for the private concerns who have had the nerve to go out and trade in other countries, but the reputation of our products is of such prime importance that I am of the opinion that every country should insist that agricultural products for export should pass through Government grading stations so that there will be no danger of any product going on the market of an inferior quality.

While in England I visited Covent Garden market, and went out in the country and talked with the fruit growers and men in the counties in England

where they grow considerable quantities of apples. The first thing that struck me was the price of the fruit; it was so high. I bought apples on the Strand that were picked and packed at Thornbury, Ont., and I paid at the rate of \$28 a barrel for them. I saw Canadian apples sold in the Covent Garden market at from \$16 to \$18 a barrel. I went to the Old Country rather unexpectedly, and having only two men on my farm, and a lot of fall ploughing to do, I decided that the best thing to do was to sell my apples on the tree, Spies, Greenings and Russets at \$2 a barrel for No. 1. I knew that apples were selling here from \$5 to \$6 a barrel. The point I want to make is that it is too bad that the Canadian grower should get such a small price when the consumer in England is paying 10d. a pound. You can quite understand that the Englishman is independent. I was in the house of a very wealthy man down in Surrey, and he told me he did not like to be imposed upon. He travels in this country sufficiently to know what things are selling for here and he told me he refused to allow his people to buy apples at the price they had to pay.

I have been warned that there is a ring over there that is very strong, and that the man that went up against it would be very sorry. I want to say to the fruit growers that you need not be afraid of any ring, no matter how big it may be; because if you control the source of supply, and if you conduct your marketing operations on sound and safe business lines, there is no ring on earth that can beat you.

I was surprised to find that South Africa was placing peaches on the British market. Last Saturday I was in Winona, and a gentleman there said he was much interested in South Africa because he was the second officer on the ship that carried the first load of peaches that ever came from Africa to England, and he said he was on the line for seven years and watched the trade grow. There is a ready market for peaches in England, and they receive 20c. to 50c. apiece. Their peaches are fairly large, but the quality does not appeal to me like our Ontario peach. They have not got the flavour of our Ontario peach, but they are doing tremendous business with them in England, although it takes twenty-six days to get them from Africa to England and they have to cross the equator. With proper organization our orchards are not more than ten days from the consumer in England, and I feel that with a little care, energy and enthusiasm we can place peaches on the market over there at prices that will give a profit to the grower. Think of the tremendous consuming population that they have at Manchester, where within a radius of a very few miles there are eight million people, and London with about the same population. An apple grower in Kent told me that they had difficulty in marketing the fruit grown in England because of a water-tight association or ring that controls the market, and as a result they established their own stores opposite Covent Garden, and they are selling their fruit there to-day, and they are making money and are receiving from 50 to 100 per cent. higher than they formerly did.

In conclusion, I want to say that I look to the building up in this province of an organization that will take care of this industry, and I want it distinctly understood that in the development of organizations of this kind it will not result to the injury of any legitimate industry. I look to the development here of a safe, sound, sensible and strong organization for the handling of our fruit, and I want to say that you may rest assured that at any time my services will be at the disposal of the fruit growers, and anything which I or the officials of my Department can do in co-operation with the Federal Government for the building up of the fruit industry in the province will be gladly done. There

never was a time in the history of this country when every branch of our agriculture should be stimulated and developed to the utmost as right now. We have big problems ahead of us and over us, and the only possible way that we can discharge our obligations and solve these serious problems is developing each and every branch of agricultural industry and stimulating it to the utmost and by cutting clear channels of trade so that there may be an outlet for all these products at a price which will make it reasonably profitable to those who are connected with the industry.

THE PACKAGE SUPPLY FOR 1921 BASKETS AND CRATES

J. M. WALLACE, OAKVILLE WIRE BOUND BOX AND VENEER CO.

Your committee has requested the company I represent to give you some data which we may have available regarding the basket supply situation for the coming season. That is one of the vital questions with the peach grower, the early apple grower, vegetable growers and small fruit growers; they are the particular phases of the fruit industry that would be interested in my conversation. I take it that the main point you want some light on is: Are we going to be held up as we were last year for baskets? You were held up last year because the supply was not in the country. The price this year will be quite a factor in your costs when you go to market your fruit. I am not in a position to say whether fruit will be lower than last year, but I am in a position to talk from the cost end of the baskets, and give you some information as to the available supply for this year, both in the Climax and other packages.

We will take first the 11 quart and 6 quart baskets, which are the main packages used in the Niagara Peninsula, the Burlington and Oakville Districts. At Clarkson they are more interested in the berry basket. At the commencement of the season of 1919-1920, I made a close inventory of the available stock of baskets on hand—about the 15th of October, 1919—to see where we stood. I estimated there were about 2,000,000 baskets in the manufacturer's hands and in the hands of the growers. The manufacturers last year produced about 7,400,000 Climax baskets, which made a total available supply of about 9,400,000. I would judge there was fruit packed in packing boxes, bushel baskets and destroyed on the trees or ground an equivalent of about 1,500,000 baskets. In other words, we should have had 1,500,000 more baskets than we had last year. That would mean that about 11,000,000 baskets should have been available for last year's crop, which was a very large crop as you all know. You may ask why we did not have these baskets available. I want to present the manufacturer's side of the case for last year. You are more or less conversant with the fact of what happened at Oakville. We got hit by a fire on the 20th of March, and previous to that we were only about 50 per cent. capacity due largely to the adjustment of machines to the new basket. At Burlington we were right up to capacity, but the other factories throughout the country were up against the labor condition that developed as spring came along, which was not equalled at any time during the war. We could not get labor to build baskets last year at the price the baskets were sold at. The other manufacturers did their best with the labor they could get, and paid for it at the price the baskets were sold for. So far as we were concerned, we filled, both in Burlington and Oakville, 100 per cent. of our orders at the old price. Labor, or rather the lack of labor, was the reason we did not have an adequate supply of baskets last year.

Now you may ask the question: If we have another such crop next year, can the manufacturers supply the baskets? I would say, yes, providing the manufacturers have a chance. Normally the requirements for baskets is about 11,000,000. Our factories, if they are given half a chance, can manufacture 12,500,000 baskets with the greatest of ease, and that is just including the 23 factories that are in existence in old Ontario, and excluding the British Columbia capacity. The Ontario factories can manufacture a little better than 1,000,000 baskets a month, providing they are allowed to manufacture that way. But are you allowing them to manufacture that way? I wish some more of the Niagara Peninsula men were here that we might develop this thought further.

I have only been in the basket business about seven years, but I have made a very thorough study of the situation, and I find one of the great troubles is that the grower does not co-operate with the manufacturer. We hear a lot about the manufacturer holding up the grower for a big price for baskets. I want to dispute that statement. The grower is responsible to a great degree for paying more money than he should for his packages to-day. I did not come here to criticise; I take it you brought me here for some information that might save you dollars, because when it is all said and done, it is the dollars that you all work for, and that we all work for.

I want to take for an illustration a factory standing idle that has got to run in two months time. You have got to maintain your superintendent and possibly the manager or foreman, and your teams and so on. Your overhead goes on all the time. You have to charge it up when you start to manufacture. If on the other hand, you start to manufacture on the 1st of October or the 15th of October, and store your baskets, you must have a storehouse as big as this hotel for every factory. We have two storehouses, one is 140 ft. by three stories high, and the other is 200 ft. long by two stories, and we can fill these in a short time. When they are filled, it means we have to handle those baskets in there; it is an added cost of about \$1 a thousand. Then the basket man has to insure those baskets, which also costs considerable money. We have to carry the interest on that money until next October or November or December, which you have got to pay for, because no business can operate continuously on a philanthropic basis; it has got to be a real business proposition.

If a fruit grower will come in in the fall and pay for his baskets, or say, "I will take delivery now," we can give him 15 per cent. off, and be ahead of the game, because we can keep down our overhead by spreading our manufacturing more systematically all through the year. Instead of that we have to penalize you later on for this extra work we do, and we could keep down the price if we had that privilege.

I made up my mind that this year, with baskets so high, it was not practical to store our houses full. It was not sound business, because where you only use from one to five thousand, in the two plants we would store half a million baskets. We do not mind a little gamble to help you, but we do not want to take all the load. The point is you can make a substantial reduction in the price or cost of your baskets, if you will order early and allow the manufacturer to deliver in time so that he can keep his plant systematically running all the year.

A manufacturer would very much sooner shut down his plant in September or October if there was an over-supply, than he would in the winter months,

because we can manufacture probably 55 per cent. more baskets in the fall and in the winter months than we can in the summer months, due entirely to the fact that in these towns, there is a lot of labor that goes on the farms in the summer, but which can be used in the winter in the basket business. We cannot afford to pay a competitive wage, in a great many instances, and the result is in the summer time we cannot manufacture anything like the capacity we can in the winter, which is another reason why the growers should give the manufacturers some consideration because all these things enter into the costs of packages.

Touching on the cost of packages, when I went into the business, the first year I put in a stock of logs which cost me \$18.50 in my yard, and they were good logs. In the last two or three years, the increase would amount to over 100 per cent. on freight. We used to get the logs within 25 or 50 miles; now we have to go from 75 to 275 miles to insure our supplies. We take out about a million and a half feet every winter of hardwood logs, and therefore we have to scour the country pretty widely. To-day logs cost f.o.b. the cars at any shipping point about \$35, and last year when the basket situation was so bad, I paid as high as \$40 a thousand freight alone on logs, whereas I used to buy the logs at \$18.50 landed in my yard, and baskets then were selling at \$35. There was more money in them then than to-day when they are selling at \$100.

Basket bottoms that we used to buy at \$8.50, last year they wanted \$25 and \$26 for, which is 300 per cent. advance. Leno that I bought in 100,000 yard lots at 3¼c., last year they charged us 13¾c. a yard. The Government requirements for baskets mean that we must have closer supervision and throw more baskets to the discard, and when you throw 25 out of every thousand, it means money. All these factors enter into the cost of the baskets. And it is very difficult to get timber. Last year after our fire, I was able to sell our logs that were at shipping points and which I could not possibly use early in the season at \$80 and \$90 a thousand f.o.b. the shipping point.

At the Fruit Growers' Convention at Rochester about a month ago, the growers were contracting and buying at that time their baskets at \$135 a thousand for the 12-quart size, which is equivalent to our 11-quart basket, nested. As compared with that we are charging you \$130, less \$6 if you will come to the factory and get them, nested; that would be \$124. Then we allowed you 15 per cent. off, last fall, if you would take the baskets and pay for them, which would mean another \$20 or a little less, so your baskets would only cost you, with the covers, about \$105 or \$106 as against a price of \$135 across the line.

I can ship baskets to the United States and make as much money out of them as by selling them to our own growers, because over in Penyon, the biggest factory of Climax baskets, they are selling at \$150 a thousand, nested, and they wanted to buy some from us. I believe the manufacturers in Canada are treating the growers fairly. Are the growers treating the manufacturers right in withholding their orders and allowing the manufacturers to remain shut? When you want baskets next year you will pay the price.

MR. FLEMING: You say you can sell in the States; there is the exchange to be taken into consideration.

MR. WALLACE: Baskets are quoted at \$150 a thousand, nested; our price nested is \$124, so there is \$26 a thousand difference. Then if we allow 10 per cent. commission to a commission man over there, it brings that down to about \$112. Our price would be \$112 plus 25 per cent. duty, which would be \$137.50.

In other words, we could land them over there at \$137.50 paying the duty going in, and that allows the man on the other end \$12.50 to handle them, and we would be in about the same position.

What is the position of baskets coming over here? They are booked out there at \$135 we pay $27\frac{1}{2}$ per cent. duty or 30 per cent. duty on \$135, which would be \$40.50, and that makes \$175.50, plus the exchange on \$135 at 15 per cent. say, \$20. In other words, baskets coming over would cost you \$195 and then you have to pay the freight and the exchange on the freight so that your baskets would cost you at the minimum \$200 a thousand f.o.b. here. So you cannot think we are treating you unjustly when we offered you baskets at \$106 a thousand last fall, and you would not buy them.

To show you the business ability of some of the co-operative associations, I will take you back three or four years. Take the Clarksons Association. They call for their tenders for the 1st of October. They know what baskets they are going to require, and so does every grower. When their tenders are in, we book their orders, and they get that 15 per cent. off. We put in the baskets at Clarksons at \$85 a thousand this year as against the prevailing prices of \$100. We have already put in about \$30,000 worth of deliveries to Clarksons, because we can run our shop and get all the help we want.

I want to touch on the quart berry box for a moment. There is used in Canada at the present time about 9,000,000 quart berry boxes a year; that is the average consumption. Last year we were short, and there was carried over possibly 1,000,000 from the year before. We only manufactured last year about 8,500,000, and there are no quart berry boxes in the hands of the farmers, the growers, or the manufacturers, so it is up to the manufacturers to build a sufficient quantity for this year's requirements. I believe quart berry boxes are going to be scarce—they are going to be very scarce—and the reason is that labor has got beyond the manufacturers. We used to pay a girl \$1 a day to build quart berry boxes; and she would turn out 1,500 quarts with a tacker. The day has gone by when you can ask a girl to work for \$1 a day. It is not right nor fair nor just under the present living conditions. They do not want to do piece work, and we cannot organize and get production through on that basis. We went out of manufacturing altogether at Burlington and Oakville just for that reason, but we got two other factories where we make quarts entirely, and by starting the 1st of October and never stopping we got out five or six million. We handle from 50 to 70 per cent. of the quarts used in Canada. This year we find we will have to increase the production by making quarts in both Burlington and Oakville.

We submitted a package to the Fruit Commissioner yesterday that he considered would be satisfactory as a quart berry box this year. It will be sold at the same price as the regular wooden quart.

In connection with the 27-quart crate, we were unable to buy shooks the last two years, and we have been making a veneer crate out of the waste material from our box shop, and that is why we are able to sell at our low price. We put 40,000 of these in Clarkson, and each man I have spoken to is satisfied with the crate. It cost the Clarksons Fruit Growers' Association 32c.; it is 33c. for the shooks alone.

At Burlington we are making an apple package that might interest you. We used to make a market hamper, but we found that it was not satisfactory; the apples in the bottom got bruised, and they were not stiff enough in the sides.

Then we started to make this package, and the business has gradually increased. Last year we made from 8,000 to 10,000. Our manager at Burlington said they shipped a car, first of hampers, then of barrels, and then this package, and the word came back: "Please ship the hamper with the board bottom when next shipping." So they must have found the fruit arrived in good condition. The package is straight up and down with a solid board bottom reinforced, and the package is well protected.

Q.—How much does it hold? A.—I have never measured it, but I would say practically a bushel.

Q.—What is the price? A.—It all depends on the quantities and the shipping point, and the time we get our order.

Q.—What is it worth to-day? A.—35c.; at the factory 34c.

Q.—Does that include the top? A.—Yes.

Q.—And the fasteners? A.—No.

Q.—How do you prevent depreciation in piling one on top of the other; the bottom of the package is smaller than the top? A.—Yes; but you pile them on the rim, and the rim is sufficiently rigid to take the weight.

Q.—What is the price of the 11-quart basket at the present time? A.—It is \$100 per thousand, delivered in the grower's barn. We make a reduction of \$6 per thousand if the grower will come and take these baskets from the factory. If he pays for the baskets now, we allow a discount of 10 per cent. per annum from the date of his payment, computed until the 1st of October. He can take this discount if he wants to avail himself of it.

Q.—Do you pay the freight? A.—We will pay the freight to the shipping point in carload lots. That would be nested.

Q.—In the event of a grower buying these baskets the 1st of October, who looks after the insurance of them in his barn? A.—He has to protect himself if they are out of our hands.

Q.—They are still your baskets if they are not paid for? A.—Once they are delivered we have no control over them.

Q.—That is the price without covers? A.—Without covers. The slat covers are \$30 per thousand, and Leno covers \$40 per thousand.

BARRELS

W. A. FRASER, TRENTON COOPERAGE MILLS, LIMITED.

Mr. Wallace has pretty well covered the general features that have governed the manufacture of packages for the last two years.

The barrel situation must be looked at from two angles: first, from the standpoint of the grower or the buyer or user who purchases his own stock and makes his own barrel; and second, from the standpoint of the distributor, and that is where I am interested. Our contention is that the distributor must be protected or he is not going to stay in the business. He is essential to the trade in its present shape, because if the distributor does not purchase his stock and make apple barrels for the grower, the grower in 90 cases out of 100 is not going to have the package when he wants it. If the grower at the proper time of the year will make his purchases, or give the manufacturer a chance to anticipate the supply he will be expected to deliver, he can purchase his stock at a minimum price, make his barrels himself and have them when he wants them. On the

other hand, if he is willing to go to his local cooper and place an order with him even at the time of the year when the apple has started to develop, he will be assured of his barrel supply at a reasonable price. Those are the essential features in the situation as I see it from the general standpoint.

In 1920 there was undoubtedly a very acute shortage of apple barrels. That shortage developed through different circumstances both in the United States and Canada, and it was a question of supply and demand which resulted in a high price. In 1921, the situation must change. It has changed inasmuch as there has been a reaction in the price of most commodities, and cooperage stock has decreased in price. Those who want to purchase cooperage stock can do so at quite a nominal figure. On the other hand, if they want to follow the second procedure and buy barrels from their cooper, if they will get together and size things up and gamble on their requirements, they can get their packages at a nominal figure. It is up to the grower to a great extent to co-operate not only with the manufacturer but with the working cooper.

As far as prices are concerned, we won't again get back to pre-war conditions. Prices have materially declined but we cannot get back to pre-war conditions, because there are so many things that govern the cost of production to-day that did not exist before 1914, that demand additional expense. We have the Workmen's Compensation Act. Last year we paid some \$4,200 to get our men under that Act. We have a 45 per cent. increase in freight rates. The cooperage manufacturer is confronted by the fact that he has purchased his raw material for the past year under war conditions, in competition with men in the basket business, cabinet business and other businesses where that class of lumber is used. Therefore the Canadian cooperage manufacturers to-day are carrying a stock of raw material that cost them as much as the stock of 1920, and they do not expect to make any money out of it. The prices this year are competitive, and they will be competitive whether the manufacturer makes a profit or not.

As far as labour conditions are concerned, that point was covered by Mr. Wallace. As far as the supply of cooperage stock for 1921 is concerned, owing to the very mild winter in Canada, there is less stock in the mills than at any time since I have been in business. In fact there are only two cuts landed at the mills. We are not only manufacturers but jobbers, and we buy extensively in the United States to take care of our Canadian business. As jobbers we are quite willing to gamble on a job, and the user of the apple barrel must be willing to help us gamble or give us an inducement to gamble inasmuch as they will require a certain amount of stock. If the growers will gamble on two-thirds of their requirements, we will gamble on the other third, and guarantee they will have it when they want it and also set the price on it so that they will know what they are paying. We have got to get together, in that particular situation and trust each other. It has been our policy to tell our customers what the situation is likely to be. We are in touch with the cooperage situation not only in Canada but all over the United States; we possibly handle 50 per cent. of the cooperage business in Canada, and we will give any of our customers the best advice as to when he should buy. We will see that there is enough cooperage stock to supply the demand, but if we are going to do that, we have to know where we stand. In 1920, the whole district where we supply 95 per cent. of the cooperage stock was looked after, it may be at a high price, but we have to buy at a high price. At any rate, the crop was taken care of, and that can be done this year if we get together, and if we get together at the proper time, it can be done so that we will get a cheap package.

Q.—Can you tell us about the price to-day? A.—It is based on the present price of apple barrel stock.

Q.—Give us the price of stock first? A.—Apple barrel staves, 28½ inches to-day list at \$20 a thousand. No. 1. 6 ft. coil elm hoops, \$35 a thousand; apple barrel heads 16 cents and 17 cents each, depending on hard or soft wood. Coopers' nails \$11 a keg, f.o.b. cars, Ontario points.

Q.—What about the price per barrel? A.—About \$1.10 each; I am answering that from the standpoint of the retail cooper. As I said before we have to protect the distributors, and the only way is to see that he has a living profit.

Q.—Are these prices last fall prices? A.—Present prices. These prices are not based on cost; they are based on competitive markets. Logs cost \$50 or \$60 delivered at the mill, which those prices do not cover.

Q.—What would be your price on 3,000 or 4,000 lots? A.—When would you take delivery?

Q.—The present time? A.—\$1.00 each.

Q.—What time would you make that delivery? A.—I would make that delivery up to April 1st.

Q.—What about the quality: do you have different grades? A.—Yes, depends on the kind of stock you use. There is only one grade in hoops. We sell No. 1 elm hoops. There is only one grade apple barrel listed, but there are different grades in staves. That price would cover No. 2 elm stave.

Q.—It would come under the head of what? A.—Apple barrel stave 28½ inch mill run; the hard wood heading would be mill run and the soft wood would be No. 2. It would be the standard size 28½, with 5/8 bill.

Q.—Have you decided on jointing for proper sized barrels? A.—Yes; we manufacture all our stock this year, standard apple barrel size.

MR. WALLACE: I want to make special mention about this barrel business. I have been advocating to the growers to buy their stock now and use up some of the surplus energy that is going to waste all over the country, and I think a barrel would cost about 90, 91 or 92 cents altogether.

MR. FRASER: I would say in round figures those prices are right, but I would say 95 cents to be sure. Last year the barrels were costing 17 cents apiece for labour, but you can make a barrel to-day for 10 cents or perhaps less. If anybody is thinking of buying stock, he should buy it as soon as possible. The statistics covering fifteen years in the cooperage business show that during the months of February, and March, the stock is always lower than at any other time of the year. Another reason is that the cut in Canada is practically nil; it is not one half of what it should be.

Q.—How is it in New Ontario? A.—We have two mills working in New Ontario, but we are only manufacturing heading, and part of that heading is going into the sugar and flour barrel business.

MR. WALLACE: There have been fewer logs taken out of New Ontario this winter starting from Huntsville north than there has been in any of the last five years, and in the older sections down here we cannot get the lumber.

MR. FRASER: The second point I want to make on the stock situation is that those prices are competitive with the American quotation; there is nothing in the world that fluctuates so much as American quotations, they are governed

by necessity. They will fluctuate overnight. For those two reasons now is the time to buy apple barrel material.

Q.—Is there any supply on hand of dry staves and heading worth while manufacturing this winter? A.—No; there are not enough dry staves and heading on hand to make 25,000 barrels in the whole Province of Ontario.

Q.—Cannot you import dry staves? A.—Yes, but at the present rate of exchange it runs the price up. There is a stock of about 25,000 or 30,000 barrels on hand now available for shipping, but nobody is in a position to diagnose the case for six months.

Q.—How many barrels are required in Ontario annually? A.—I cannot give you the statistics off hand, but something like 500,000 used in Ontario.

BOXES.

S. H. MOORE, BRITISH COLUMBIA MANUFACTURING COMPANY

We come to you this morning representing the British Columbia forests, where as far as this generation, the next generation and the next generation are concerned, there is no shortage. Furthermore the British Columbia Manufacturing Company, which I have the pleasure to represent, operates three large lumber mills and two shook mills, continuously throughout the year, working full force, and they are able to handle very large contracts.

Anyone who has been to British Columbia and seen the fruit and tasted it, with all due deference to our fruits in British Columbia, knows that the Ontario apple has the flavor. There is no question of that. However, it is only fair to state that the British Columbia fruit growers are really Ontario men, who have gone West and are developing their business in a very satisfactory way. They have gone there and found themselves up against several conditions different to the old Province. They have found the fruit growers in the neighboring States to the south were able to get a larger profit from their apples than the fruit grower in Ontario. They also found there were none of the beautiful elm trees out there so they could not make the Climax baskets, but they were not sorry because they found in packing them in boxes it lent itself to better display and the fruit reached the consumer in better condition than when packed in barrels and topped off, and all the other features of a large package. They found a very much greater profit was available to them through packing in the method that had been adopted largely by their neighbors to the south.

I have with me this morning an apple box made by the British Columbia Manufacturing Company for a firm in Ontario, and by the way, we have already developed a large business in the Province for its production. The box is made of B.C. spruce; all their boxes are made of the same material. It is odorless and tasteless, which is a great point in favor of it. It has one piece ends and one piece sides.

MR. CAREY: Is that general?

MR. MOORE: Yes, we will guarantee to deliver to you in carload lots, boxes that will have one piece ends and one piece sides. This box never splits. On account of the B.C. spruce tree growing so large, it lends itself to much better wood, better grain, less knots and not liable to split. I have never seen any boxes that have come down here, split or cracked in the end. That box is also very much lighter in weight than the Ontario box.

The two gentlemen who have spoken have already told us about the scarcity of lumber in Ontario. We know what the government is doing about the reforestation of our Province which is a good thing. The British Columbia timber being of a long grain gives it the feature of stability, which is very necessary in the packing of fruit. It is made lighter as well and that means less cost in freight in shipping overseas or long distances.

Q.—They have abandoned entirely the one piece top and bottom? A.—I think so for the sake of ventilation, and also for the give that is necessary. The apples are packed a little higher in the top. These are priced to the buyers here at 30 cents, delivered at your station, in carload lots.

Q.—Does it take four to a barrel? A.—Three apple boxes to a barrel. It is printed in two colors at one end, without any extra expense.

Q.—What is the inside size? A.—It is absolutely standard size; inside measurements are 18 x 11½ x 10½.

Q.—Is that price made up or in the shook? A.—In the shook.

MR. CAREY: You are not quite right about the comparative capacity of the barrel and this box; it takes three and a half or three and a third boxes to the barrel.

MR. MOORE: As far as the berry boxes are concerned I would call your attention to this collapsible berry box used in British Columbia. These are very dry. They come in the knocked-down form as well and are easily put together. This box has some features worthy of notice; the bottom for ventilation is a very necessary feature.

Then there is a 27 box crate. I would like to correct a statement made this morning, when 32 cents was the price given of the crate in knocked-down form; it is 23 cents delivered in any part of Ontario.

Q.—That is the price of the crate; what is the price of the box? A.—\$6.00 a thousand. The crate is built with these decks resting upon the ledge in the side and not resting on the berries, and it is so made that the boxes will not slip out. There is plenty of ventilation through this box, both from the bottom and the open features in connection with it.

One big feature in connection with the berry box is the square sides. With the tapered box, there is always a tendency in transportation of the shaking down of the berries, and the crushing of the bottom berries. This is also of the standard size.

This is the 24 box crate, and is preferred by some for long distance shipping. It is a good solid package.

Then we have the five pound tin top basket for early tomatoes or other larger fruits. There is plenty of ventilation, and it is a good solid box. The price of this is \$18 a hundred.

Q.—Do you use those for peaches or plums? A.—Peaches, plums or any of the larger fruits. For tomatoes it would bring a man great reward for his trouble in packing, and not allowing the Americans to ship in all the early tomatoes. There are plenty of tomatoes in Ontario to take care of the early market providing you have the package to put them in.

Q.—Does that \$18 include the price of the crates too? A.—It would be \$18 a thousand of these containers, and \$18 a hundred for the crates. As far as we are concerned, we can promise delivery almost immediately from the time the goods are ordered, on to the track in Vancouver, and in about three weeks to

almost any point in Ontario. An unlimited supply of material makes it possible to afford you a service, that I believe will be appreciated.

Q.—The prices quoted are f.o.b. Toronto? A.—For Ontario points.

Q.—Carload lots? A.—Yes.

Q.—Not open for distribution from Toronto? A.—No; we have a number of associations that buy in quantities, and the local fruit growers get their supplies from the headquarters.

Q.—How many apple boxes are there in a carload? A.—About 5,000.

Q.—Is the price 30 cents. made up or in the shook? A.—In the shook.

Q.—Do you make a pear box as well as an apple box? Yes.

MR. PALMER: We have a basket that holds a standard States bushel, slightly less than a Canadian bushel, but which I understand passes all right on this side, and which we can deliver to Toronto or Ontario points for 30 cents, set up. I believe it is a package that is going to be popular over here. It goes right to the consumer, furnishes about the right amount, and it comes already set up, and there is no extra expense. It loads well in cars, and makes a very fine display package.

Q.—Would that be duty paid? A.—Duty paid and exchange paid. That is the price in Toronto in carload lots.

Q.—Does that include posts? A.—Posts are 15 cents a dozen extra.

MR. COULSON, of the Canadian Wire Bound Box Company, also spoke in regard to the box manufactured by his company. He said: This box can be shipped out in the shook form or in the made-up form. The top is called a wedge loft; it is slipped in and the wedge secures it, and it goes to its destination without danger of being broken, and this box cannot be tampered with in transit. It is standard size.

Q.—What is the price of the small box? A.—42 cents and 52 cents.

Q.—How do you pack it? A.—The box is set on its end, and the contents placed in and filled.

Q.—It is a jumble pack? A.—Yes.

J. R. HASTINGS, Chief Inspector Western Ontario: I have a few things to say with regard to packages in general, and it will have reference more to the Fruit Marks Act as it applies to the packages than what has been said by the previous speakers.

We are going to face a somewhat different condition in the season of 1921 from what we faced in 1919 and 1920, in the package situation. In 1918, an effort was made for a very complete standardization of all fruit packages, particularly of the eleven and six quart baskets, and that is one of the features that many of you are not particularly interested in. An effort was made to put these regulations in force in 1919, but it failed for the reason that packages which had been in storage in many of the fruit houses from one to 25 years, were brought out, and there was nothing for the Government to do but permit the use of all these old packages. It was felt by the Department that 1919 would clean up that condition and get rid of all these ancient packages.

Then we reached the season of 1920, and you know what happened. Every conceivable package that would carry fruit was used, and it was certainly not up to the Government to prevent the use of anything that would carry fruit in anything like a reasonable way.

I feel now that practically all of the old packages have been disposed of. There are very few packages which were manufactured prior to 1920 left in the country, and we are now face to face with a somewhat different condition. So far as barrels are concerned, I cannot see that there need be very much difficulty in getting a barrel that will be absolutely satisfactory to the grower. There is much less danger of a barrel going to pieces than there is of our Climax baskets, so that after the manufacturer has complied with the requirements of the Fruit Marks Act, there is nothing left but for the grower to give the barrel reasonable care when it is in his possession.

I think you have heard enough on the subject of the box, but I want to say a few words about the Climax basket. Prior to 1918, we had no specific dimensions or well defined specifications for baskets; the manufacturer could make pretty well what he pleased so long as it held the quantity. In the Conference of 1918, everything that entered into the manufacture of that package was specified, and it was done with the acquiescence of the fruit growers and the manufacturers. It does not impose a hardship on any manufacturer to comply, not exactly with, but to make a substantial compliance with the regulations, and I want to say that most of the manufacturers are doing that. There are some basket manufacturers who are evidently a law unto themselves, and they are going to make a basket as they please, regardless of any Government regulations, but there are only a few of them. The package question, so far as the basket is concerned, has reached a point where the grower has to put his fruit into a basket in order to have it accepted by the transportation companies, and it is up to the grower himself to see that he gets from the manufacturer a package that is in substantial compliance with the Fruit Marks Act.

MR. FAIRBAIRN: Would that put the onus on the grower?

MR. HASTINGS: I am coming to that. The opinion seems to be abroad among the growers that the Government should see that the manufacturer lives up to the standard as set, and the onus is on the manufacturer and the Government, rather than on the grower, but it does not work out that way in general practice. When you contract with a basket manufacturer for your supplies, by simply stating it must come up to Government standards, the manufacturer will probably see where that provision is in his contract, that you get baskets that comply with the Government standards. We do not insist on an exact compliance with the specifications, but a substantial compliance.

MR. FAIRBAIRN: Is it not possible for these factories to be looked after by the government through qualified inspectors, because there are very few growers who actually know what these specifications are?

MR. HASTINGS: There is no trouble in finding out by getting a copy of the Act.

MR. FAIRBAIRN: That entails a good deal of work when you spread that over 3,000 growers, where one inspector could do the work much more efficiently.

MR. HASTINGS: I will probably cover that point shortly. As a matter of fact the government is doing that thing now. I have been to practically every factory in Ontario west of Toronto, with two exceptions, and I under-

stand it to be my duty to see that these factories live up to the regulations, and most of them are doing it.

MR. FAIRBAIRN: You are speaking purely of Climax baskets?

MR. HASTINGS: Yes, entirely. I do not wish to create any wrong impression with regard to other baskets. There are other packages offered to the growers that are not Climax packages. I have reference purely to the eleven and six quart Climax baskets.

During the last season, I have found that one of the vital difficulties is the handle, and this is something that the growers may be to blame for to a certain extent. The basket may be in all other respects of excellent material and strong, but if the handle is faulty the whole package is faulty, and I daresay that 75 per cent. of the losses that accrued to the transportation companies last season on account of faulty baskets was due to the rotten handles—handles that had been made out of dead wood or not made according to specifications. I know of one instance where a grower purchased 500 handles, and out of 500 he used 40, the rest were absolutely useless. That is one thing the growers can certainly insist on, and he can tell very readily whether that handle is all right. The handle must be strong enough to carry the package or the package is faulty.

A MEMBER: If the package is improperly handled or improperly taken care of by the express company or carrying companies, the handle won't save the package if it is made of iron?

MR. HASTINGS: The fault does not all lie with the express companies or carrying companies. Another thing I have discovered is that the law requires that two nails will be driven into the bottom of the handle, and naturally it is expected these nails will be driven into the bottom of the package securely. A great many of our growers handle their own baskets, and they use only one nail, and in some instances the nail was not in, and I venture to say 90 per cent. of those baskets never reached their destination unless the transportation companies fixed them up.

Q.—How will the growers remedy this handle business?

MR. HASTINGS: Refuse to accept handles not in accordance with specifications. The grower must take steps to see that he is getting a package the law requires. The government cannot do all these things for him. We are going to see that the factories comply with the law as far as the government can do it. I know the factories that are making the packages the law calls for, and the task is not going to be very difficult. As to the penalty for not keeping to specifications, first of all we will lay the information against the man and have him fined. Another thing that may be done is that the grower may refuse to accept those handles or the baskets. Also the express agent may, when he sees these baskets are not in accordance with the regulations, refuse to accept them.

Q.—Supposing he does not; he is at a loss for the fruit in the basket?

MR. HASTINGS: Over and above all that, the Dominion Fruit Branch Inspectors, in addition to inspecting the fruit, are also inspecting all these packages, so that really the grower is pretty well protected, and I am perfectly well satisfied that we are not going to have very many faulty packages on the market during 1921, so far as these baskets are concerned.

Q.—What would you do with a manufacturer who accepted a contract, according to specifications, but did not deliver the goods until after the man's crop was all marketed; in fact had no intention of delivering the goods?

MR. HASTINGS: That would be a breach of contract, and the man has his remedy at law. We could not put him in jail for it.

I want to impress upon the growers that when they are handling their own baskets, they must put in two nails in the bottom, and see they go into the bottom. I think the manufacturer should have his share of the blame, and the transportation company should take its share; but I think the grower should also take his share, and he has got a share. In a great many instances, the grower does not take care of his baskets. I have seen baskets stored in all kinds of unsuitable places; over chicken coops, in lofts, exposed to the weather during the whole winter, and piled up altogether too high, so that they are out of shape in the spring. They are left out in the orchards during rain storms, and in dirty places until the package has become very unsightly, and no one can tell me that that has not a tendency to cut down the price of the fruit. Women will take a clean package 99 times out of 100. For that reason I think it is well to call the attention of the growers to that feature.

MR. BIGGAR: In regard to packages from the States, do they have to meet requirements?

MR. HASTINGS: There are certain requirements that have to be met by the importer.

Q.—The strawberry boxes are only about half a box?

MR. HASTINGS: They have a small box of berries and they have the regular box, that is, the box that corresponds with ours, but there is no provision in our Act that excludes these packages. I think the only provision is that the man who imports from the United States or any other foreign country must put his name on the box: Imported by———. That is the only requirement so far as imported fruit is concerned.

MR. WALLACE: There is one point you cannot dwell on too emphatically, and that is the care the package gets after delivery. The stock should be kept absolutely dry; no barrel will stand kept wet three or four weeks at a time in an orchard. It is important that a barrel should not only be kept dry before filled, but every grower should have a proper place to keep his barrels in after they are filled.

MR. HASTINGS: You will never get a satisfactory pack of apples, even if you put on an army of inspectors, until your apples are packed under competent supervision, and under cover from the weather—in other words, in a central packing place. That is the conclusion I have reached after a study of the situation extending over three seasons. The government is not particularly interested in how a man packs his apples so long as the grade is there. They can legislate until they are black in the face, and we can inspect until we are black in the face, but we will never get a satisfactory pack until the packing is done under competent supervision and in a central packing house. We have men in Western Ontario who have well equipped packing houses, and they put up a beautiful pack, but there is only one in a hundred who do that.

MR. WALLACE: That is not covering the point that it is absolutely necessary to keep the barrel dry.

MR. HASTINGS: You are absolutely right. No grower should allow a barrel whether empty or full to stay out even an hour on dirty ground, where it can be rained on and snowed on until it is hardly fit for anything.

MR. FOSTER: Has an inspector any jurisdiction over that? Have they the privilege of refusing to let them go forward?

MR. HASTINGS: No, we have not. We do assume jurisdiction sometimes, but we have no legal authority to stop a shipment of fruit no matter how dirty the baskets may be, so long as they comply with the regulations as to dimensions, and the fruit complies with the regulations. I have seen packages that were so dirty I would be ashamed to ship them even to the cheapest huckster in Montreal, and the fruit in that basket was absolutely first class.

MR. SIRETT: Unless you have a cold storage to put Greening apples in, they will keep better in the orchard than in the ordinary storehouse, so they are left in the orchard until the weather is cool enough to store them, and is it not much better that the barrel should suffer than that the apples should suffer?

MR. HASTINGS: Do you mean to tell me that a barrel of Greening apples will keep better exposed to all sorts of weather conditions, rained on and snowed on, and then dried out by the sun the next day, than in a store house? Do you mean to tell me those apples are in good condition for shipping?

MR. SIRETT: I mean to say I would sooner have a Greening apple in the orchard than in the ordinary storehouse. We do not usually expect there will be very much snow or rain until later on. I am speaking from my experience and the experience of the other men throughout Northumberland: that the man that has his apples out in the orchard suffers less from injury to his apples, if they are left there until the weather is fit to store them, provided he gives them as much protection as he can in the orchard, than in the ordinary storehouse.

THE GRAPE MARKETING SITUATION IN 1920-1921.

T. J. MAHONEY, R. R. 1, HAMILTON.

I find in order to give you a comprehensive idea of the grape situation it is necessary to go back a little further than 1920 and refer you to August 1919, when the first Grape Growers' Association was established in the Niagara Peninsula. At that time there were a number of grape growers especially in the vicinity of St. Catharines, who felt in making comparisons of prices received for grapes in Ontario and on the American side, that they were not receiving a fair price for their grapes; they were more convinced of that fact by reason of the wine manufacturers setting their own prices.

Because of that these gentlemen got a small organization together, which gradually extended to other places, and in August 1919 we had from four to five local organizations in the Niagara District. The president of the St. Catharines Association was appointed to wait on the wine manufacturers with regard to the prices for 1919. They were told when they approached the officials of the organization that the prices of grapes had been fixed on the 7th day of June, and so far as they were concerned there was nothing to be gained by further discussion. However that small organization succeeded in getting in touch with a couple of dealers on the other side, and one of them was induced to come to the Niagara District and he bought some 58 cars of grapes, which, I believe was the largest amount shipped from the Niagara District up to that time.

In January, 1920, we decided if we were going to do any effective work with regard to marketing the grape crop, we would have to start early and if we were to have the proper influence in the district we should have, it would be necessary to get more information. We decided therefore to approach the Councils of the different grape-growing districts and secure the services of their

officials in having a census made. The result of that census was tabulated in the first part of June, and it was certainly a surprise to us to know that there were only 4,500 acres, and not 8,000 acres as had been thought, and in a normal year there would be a production of 10,000 tons.

When we began to make comparisons and consider the limited acreage which had to supply the whole of Canada with grapes, and when we considered the amount the wine manufacturers needed for their purposes, and what the grape juice concerns required, and further when we considered the prices that obtained in the States were higher than we were obtaining, we were thoroughly convinced of the fact that we are not receiving the market price for our grapes, and in looking around for the factors which prevented us from getting that price, we immediately decided the wine manufacturers were probably the cause.

We will take as an example 1917; in that year the wine manufacturers went out in the early part of July and made contracts for their requirements at \$30 a ton. As soon as the wine manufacturers got their supply, the dealers made contracts for what they considered a sufficient quantity for themselves at 20c. a basket, basing their price at \$30 a ton. As the season advanced it was seen that the grape crop was going to be short—the average was a little over 50 per cent.—and the prices went up as high as 30c. a basket. It is true the wine manufacturers in order to keep the grapes from being taken away altogether increased their price from \$30 to \$40 a ton, but the dealers did not follow their example, and the grape growers of the Niagara District who had contracted their grapes at that price had a very substantial loss.

These are the conditions the grape growers saw facing them, and when they found there were only 4,500 acres of grapes in the district they decided that the important thing to do was to have the facts placed before the growers. Beginning in June we held a series of meetings, and we organized thirteen local divisions with a chairman and secretary, and secured the membership in our Niagara Grape Growers' Association. Just here I would like to distinguish between the Niagara Grape Growers' Association and the Niagara Peninsula Growers' Limited which is really an outgrowth of the Association.

Having placed the facts before the grape growers of the district by these series of meetings—I think thirty-two all told—we held executive meetings in St. Catharines every Saturday afternoon at which the presidents were present, and the whole situation was thoroughly discussed. We decided to get in touch with the wine manufacturers because we felt that was where we should start our work if we wanted to secure any results. We sent letters to all the wine manufacturers asking them to meet us to discuss the grape-marketing situation in 1920. Two of the representatives that met us took pains to explain they were not there as official representatives but simply to hear the proposals we had to make. One of them made a suggestion that a conference be held at which there would be three representatives from the wine manufacturers, three from the dealers of the Niagara District and three from the grape growers. That proposition was entirely satisfactory to our committee, and the meeting was arranged to take place on August the 4th. On August the 3rd our secretary had a telephone message from the gentleman who made that proposition, who represented one of the biggest wine-manufacturing concerns in the district, and he stated that after taking the matter up with the other factories they decided there was really nothing to be gained by having a conference with reference to the grape-marketing situation as they thought it was too early in the season to discuss prices or other matters connected with the industry.

We did not have any mistaken idea of what that meant; we knew it meant a show-down, and we determined to come out as victoriously as we could. We then called a meeting of the grape growers at St. Catharines on August the 7th. We could not get a hall big enough to hold the meeting, and it was one of the hottest days in 1920. The executive met before the meeting took place and we decided to go before the meeting and propose that a Joint Stock Company be formed, capitalized at \$500,000, 50,000 shares at \$10 each, and that we go into the business of selling grapes. When that proposition was submitted to the mass meeting there was only one man in that large assembly who refused to stand when we asked for a standing vote approving of it.

Our charter was drawn up on the following Monday, on Tuesday the Provisional Directors met and signed the application for the charter which we received on the 26th of August and on the 13th of September we opened an office in St. Catharines. Between that and the 10th of November we sold 410 cars of grapes of which 341 went to the United States market.

With regard to price: In the early part of the season the wine manufacturers endeavoured to make their contract for supplies at \$50 a ton but the price we thought we should get was at least \$80 a ton. When we decided to form our company we had a mighty difficult situation to contend with. As you know in the Niagara District we had a most abnormal crop of fruit. Peaches were a glut on the market and plums you could not give away, and we were up against the most acute basket famine in the history of the district.

When we organized the company we had three objects in view; first, to get packages to handle the grape crop; second, to get experience as dealers; and third, to take away from the wine manufacturers the power which they had been so long exercising in fixing the price of grapes without consulting the growers.

Before we opened our office on the 13th day of September, we had made arrangements with the American Fruit Growers, Incorporated, one of the largest selling organizations in the United States to handle our grapes on the United States market on a 5 per cent. basis, they to guarantee all collections. Our experience has been entirely satisfactory with that organization; and they came highly recommended to us, and we have had no reason to doubt the high accommodations which were represented to us when we made our contract with them. In order to handle our grape crop it was necessary to import over 100,000 bushel baskets from Indiana and Georgia, and of these, 96,000 were filled, loading 200 cars, and sent back to the United States. The actual price to the grower for his grapes shipped in these bushel baskets was \$80.20 a ton, that is, after everything was paid including the price of his baskets. We sold 306,000 six-quart baskets of which 200,000 went to the United States, and we sold 75,000 eleven-quart baskets. These brought \$103 a ton, or \$93 after the baskets were paid for. We sent grapes to Boston, Philadelphia, New York, Pittsburgh, and even over to Detroit, notwithstanding the fact that they have such a quantity of grapes in Michigan, and other markets in competition with the American grapes, and they brought as good if not better than the American article. Had we been able to handle them in the American standard basket, we would have received \$12 a ton more.

Our total turn-over was \$496,000. In paying the growers we decided in the first place, to fix on the price of \$85 a ton and pay them 80 per cent. within ten days, and the remaining 20 per cent. inside of thirty days. We followed

that policy throughout the season, and we found after the year's business was done we had a surplus left of \$33,000, which we did not know what to do with, so we pooled that amount of money, giving each grower what was coming to him in proportion to the amount of grapes he had supplied, and based, of course, on the kind of package. Those who had 11-quart baskets got the highest price.

In entering 1921, we are doing so with much better prospects than we had when we organized. We were forced into the grape marketing business owing to circumstances over which nobody apparently had any control except the wine manufacturers, and possibly the dealers. However, we got into the business and we are in it to stay. We have at present under contract of the 4,500 acres, 2,500, and our objective is 100 per cent. of the grapes under the control of our company. We may not succeed in getting that this year, but we are going to make the life of every grower in the Niagara District miserable until we do get him; if one man cannot get him, we will send another to point out that it is to his own interest to get into the organization and form a distributors' company that will have absolute control of the grapes which he produces.

On account of the Emergency Tariff Bill which appears in the papers to-day, which puts 4c. a pound on the cherries going into the United States, there may be some misunderstanding on the part of some grape growers that possibly the United States will put a higher tariff on our grapes; at the present time it is about \$15 a ton. I do not think there is the slightest danger of that, at present. We are receiving more grapes from the United States than we ship in, and there are other reasons why there is not much danger of any agitation taking place for higher duty on Canadian grapes.

A short time ago there was a National Grape Growers' Convention, consisting of representatives of the co-operative grape-selling concerns from the different states. Two from each company told of their experience with regard to the marketing of grapes for 1920, and it was the general opinion of all that the most profitable package to sell in was the standard twelve-quart basket. At this convention there was some discussion of Canadian grapes on the American market; owing to the effect of the odd-sized baskets, six and eleven quarts, our grapes attracted considerable attention, and it was the opinion that we had a tremendous quantity of grapes for export. But when the Niagara District is called upon to supply grapes for the whole Dominion, for wine manufacturers and for grape-juice concerns, if there is the same demand for grapes on the part of the people here as in the United States, we would not have nearly enough to go around, and when we explained these conditions they were inclined to think there was not much danger of our few acres interfering with the United States market. In the Chatauqua belt there are 30,000 acres, and if we put our whole grape crop over there, it would not make a ripple in the demand for them there. Since prohibition has been in force in the United States, there has been a tremendous demand for grapes to make home-brewed wine.

Our grapes went as far south as Louisiana; six cars went to Memphis, Tennessee, and it was a remarkable coincidence that my brother there saw Canadian grapes in a fruit store and went in and bought some. He paid \$2 for an eleven-quart basket, and he said every person who received the grapes was entirely well pleased with them, and that there would be a much better market next year. Under these conditions we have not the least doubt that we will be able to market our grapes. As far as the grape growers are concerned, we are going to insist on every package being the proper kind, and every

carload of grapes being packed and loaded in the proper way, something which was impossible for us last year owing to the short time we had to get our organization together. If we put our grapes on the American market in the same baskets the American grapes are put in, we will get anywhere from \$5 to \$10 more than the American article because our vineyards are very much better taken care of.

In connection with the Niagara Peninsula Growers, Limited, which is being organized for the purpose of marketing other lines of fruit, under the original agreement, those who wanted to join that organization were obliged to put all their fruit through it, but it was found in securing applications for membership, there was a very strong opposition on the part of grape growers who had gone into our company last year, from joining under these conditions; they felt that the Grape Growers had done good service in 1920, and they had got a much better price for their grapes than otherwise, and it would be as well to let the Grape Growers carry on and handle the grape crop at least for this year. For that reason, an agreement was entered into between the Niagara Grape Growers' Association and the committee of the new organization, whereby grapes are excluded from the list of fruits which any member had to put through the new company, provided he became a shareholder in it.

The arrangement arrived at is this: The Niagara Grape Growers, Limited, will secure contracts for all the grapes possible to secure, not only from their own members but those joining the new organization. They will also be allowed to contract for grapes with us, and we will undertake to supply the wine manufacturers with the grapes they need at prices not fixed by them but by ourselves. I hope, and to supply the grape juice concerns and the United States market, or what we can spare for the United States market. It was felt, owing to the fact the new Association is going to organize a Sales Department to take care of practically the whole of Canada, that they would be in a much better position to handle the grapes on the Canadian market than we could, while we could handle them better for the American market. It is also agreed, in the event of the new concern wishing to sell any other line of fruits on the American market, that these fruits will be sold through our organization. There was nothing specified as to what remuneration would be received for our services in that respect, but I think it is generally known that as a Grape Growers' Company we do not want to make any profit on that business. If there is a glut of grapes on our Canadian market, and we can find an outlet on the American market, we will do so.

We have two organizations with exactly the same objectives, and while it is a much more difficult problem to successfully launch a new organization than it probably is to deal with the Grape Growers, still I think if the growers will show the same co-operation and loyalty as they have shown the Grape Growers, there will be no difficulty about this new concern being a success.

MR. WALLACE: We as manufacturers are prepared to manufacture the 12-quart basket if it is going to be of advantage in the marketing of any of the fruits in the United States.

MR. MAHONEY: I have a communication signed by Mr. Baxter stating the Government is quite willing that these baskets should be manufactured, and used if stamped "For Export Purpose," and we already have an option on 500,000 baskets.

NEW YORK STATE PACKING ASSOCIATIONS

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I hesitate to say anything without first calling your attention to the fact that there is a large panacea, as I see it, for co-operative associations. The conditions under which they operate in different sections are very varied, and it is to meet these conditions that we organize. For that reason, organization takes different aspects, adopts different terms and performs different functions under existing circumstances.

To get on common ground, let me go back to the time before we had co-operative organizations, and tell you about our situation. Our particular section of Western New York State lies along the Southern Shore of Lake Ontario from the Niagara river, a distance of about 2,500 miles. It varies in depth greatly, but the district with which we are concerned is largely in a belt not much more than 10 miles wide from the lake shore. Some of our organizations do extend down into the Finger Lake section. In that section there is a tremendous amount of fruit, but it is largely tree fruit. Apples are the most prominent, then peaches and pears, running down through plums, prunes, quinces and finally grapes. The real grape section of Western New York State is on the shore of Lake Erie and also around the Finger Lakes; very little around the Lake Ontario Belt. That is one of the oldest fruit sections in the United States, there are apple trees bearing that are over one hundred years old.

There has sprung up in that district a system of marketing which may be characterized something like this: There are three types of people that are handling that fruit; first, the speculator who comes into the district and buys in large quantities sometimes as high as 200,000 barrels, but usually from 50,000 to 200,000 barrels depending on the year. If he foresees a rise in market he buys in larger quantities, and in a year like this he would not buy at all. The next class is the local buyer who lives at the station or in the community, who operates a buying and selling business in general and distributes the fruit which he buys from the grower in that community. There is also another class of buyer which may be familiarly called a cash buyer, who comes in from a distant market and either buys from the local buyer or independently, and ships the fruit from there out. I have taken pains to outline these three types of salesmen because they are important to what I want to say. As a result of this method of handling and marketing the fruit there has grown up a system like this; A speculator, cash buyer or local dealer would come into a grower's orchard and say, "I will give you so much for these apples just as they are, and I will pick them;" or he might say, "I will buy this fruit and you can pick it. Everything goes in except the cider apple." There are others who want strictly A1 stuff, and will pay the price accordingly. As a result of that varying system of buying there developed a situation where there was practically no standard of Western New York apples. In fact it got so bad that they passed a New York grading law which was intended to standardize it, but you cannot legislate men to be honest. It was impossible, not of enforcement but of operation, for the reason that everybody began to pack their fruit ungraded, and labelled it ungraded. Ninety per cent. of the fruit of Western New York went into barrels ungraded so as to get by the law. As a result of that we were losing the confidence of the buying public, and the small or retail merchant who had been in the habit of buying apples in the barrels did not know when

he bought a dozen barrels to-day whether he could get another dozen barrels anywhere like them.

We can sum up the situation by saying that there was no standard of pack of Western New York fruit and that was the big need. Because of the losing of this confidence in our pack, our fruit has begun to take a very less rate than fruit from other sections, and as a result, in 1910 there sprung up a co-operative association which some of you may have known, the Eastern Fruit Association, with headquarters at Rochester. It was organized primarily to get better prices, to have a better method of distribution, and to cut out some of the overhead and some of the commissions that were taken in the business. They failed miserably after about four years' operation, because they did not have anything to sell.

When I was county agent in Niagara County we began taking farm management records, the same as you have been taking up here, and it developed that our labor incomes in a typical fruit growing section in Niagara County on one hundred farms for a period of five years averaged \$274. That meant that the growers were getting \$274 for a year's work together with the interest on their farm at 5 per cent, and with payment for the usual unpaid family labor and their living off the farm. In other words, those growers might as well have sold their farms, put their money out at 5 per cent. interest and hired out to somebody else for \$274 and the living they could get off the farm. That did not appeal to the growers there although it was news to them, because most of them owned their own farms, but they did not reckon on 5 per cent. interest on their investment. The average of these hundred men is that kind of a man. He had a 70 acre farm, fully equipped, with tools, live stock and good buildings. Such a farm was worth \$18,000, they were selling for more than that, but that was the average capital investment on the farms. In the five year period the average returns from that farm was \$3,500. These were largely fruit farms, 15 acres of apples, 12 acres of peaches, 3 acres of small fruits, that is pears, plums and so forth, and the average cost of operating the farm including barrels, packages, seed fertilizer, etc., was \$2,300, leaving a gross profit of \$1,200 on the year's business. Most of the farmers felt they were rich. If they could come through the year, have a living off the farm and \$1,200 besides, they felt they were having a pretty good time of it. But the fact remains that the farmer was not alone responsible for that \$1,200; he and his farm working together were responsible. His farm had an earning capacity of its own; he could rent it to somebody else. If it has not an earning capacity he might better sell it and put the money out at interest at 5 per cent, which on \$18,000 would be \$900, and yet he was content to receive \$274. Another strange thing this farm record showed was that in the year of heavy crop production we got less money for total orchard sales than in the years of light production. That is not so in the manufacturing business. If you go to a shoe manufacturer and tell him he can make more money by cutting down his production he will laugh at you. The more shoes he turns out the more money he makes, and yet it is true that in the years of heavy production we took less money out of the orchard than in the years of light production.

It would then appear to be a marketing proposition. As a result of that, and taking the advice of the best people we could get in the United States, we started the building of Central Packing Houses where the fruit could be brought as it grew on the trees and packed to uniform grade. Three more packing houses were built in 1919. This year there were 22 in operation. Next year there will probably be 50.

There are hardly any two of these packing houses alike, and yet they do have some characteristics that are very similar. We needed a unit to build around. There was no other apple section of great extent where Central Packing Houses were in operation under similar conditions as ours. We figured that a packing house of 5,000 feet floor space would probably handle 20,000 barrels of apples. We must have space to put the fruit after it is packed. We considered 5,000 feet of floor space would probably handle 20,000 barrels of apples together with all the other fruits that the association members would have. It then became necessary to select the membership, and that is an entirely different proposition from what you have in your Niagara Peninsula for fruit growers; here your success largely depends on the number of people you get in. In our position just the reverse is the case. We need to select a small number of men who will work in harmony; so the membership is picked, so that in a normal year they would produce 20,000 barrels for that community. Most of these associations have about 20 members; they vary from 6 to 55, but average around 20.

We will assume that at loading station A there is a facility for building a packing house that would accommodate 20,000 barrels. The committee get to work and pick out twenty members, and they find that to build a large packing house it would probably cost around \$4,500 for the building and \$1,500 for the equipment. Ten of these men are not able to make their payment, the other ten men are. These men may vary a great deal in the number of barrels of fruit they individually will have but they each put in \$300, and all go in on the same basis. The ten men who have not the \$300 put in a demand note, non-interest-bearing, to the association; the other ten men pay their \$300. The Association gives the latter ten men a certificate of indebtedness which is not exactly the same as stock. We organized under the Non-Stock Law because we have a very serious trust law on our side. The Association took these ten \$300 notes and made a note for \$3,000 and borrowed \$3,000 from the bank, and at the end of the first year \$300 was taken out of the returns of these ten men, they were given back their notes and given a certificate of indebtedness for the \$300 which they put in.

The building was built. Each grower then made a contract with the Association to deliver all of his fruit. The fruit is delivered just as it comes from the trees. The number of the grower is stamped on each barrel and they are put in one part of the receiving room and the grower is given a receipt for his 25 or 30 barrels, listing the number of packages and barrels they contain. That fruit is then put on the sizing or grading machine. They would probably grade four or five of his loads at one time, and by that time the next member has three or four loads in and they will grade his. It does not take long to change from one man's pack to the next; it may be done without stopping the machine so long as the variety is not changed. As soon as the fruit is run off, the grower is given a packing house tally of the number of full barrels, together with the number of part barrels that his fruit has graded into, and then the fruit has become the property of the Association and its identity is lost. No man could tell which was his fruit; it is the property of the Association.

We find it takes a labor organization of about 15 or 20 people to pack these 20,000 barrels of apples. Of course it depends on the varieties; if they run to Duchess and Wealthy it does not take quite so many. And if all the fruit came together it would take more.

The organization is like this: There is a man at the receiving door who checks this fruit in, a man who empties the fruit from the barrel into the grading machine, three or four women taking out culls, depending on the quality or con-

dition of fruit, four or five men filling and packing barrels, two girls facing the barrels, two headers, and then a crew to take the fruit away, deliver it to the trucks or put it into storage. Besides that there is the superintendent and bookkeeper, and there is one other person who checks the fruit as it goes from the packing house. We find such a person ought not to do other work but keep track of the fruit, because it is very necessary that it be done accurately. With such a crew we find the first year the Association can pack about 400 barrels a day. The next year with the same number of men even though the crew is not the same in the packing house but with different arrangements 600 barrels can be packed a day, and some Associations with a crew like that have packed as high as 969 barrels in one day of ten hours.

We pack our fruit graded to one-quarter of an inch. Each Association so far has been handling its own sales policy; each Association hires its own salesmen, and makes whatever contract they want with him. When the sales are made regardless of where they are made, from the storage or right from the packing-house floor, when the net amount is ascertained it is pooled and each grower gets for the same size and the same grade, the same price for his fruit.

These 23 associations last year, consisting of 500 growers, packed an equivalent of 350,000 barrels. By that I mean there were 250,000 barrels of apples, about 200,000 bushels of peaches, 50,000 or 60,000 bushels of pears, about 55,000 twenty-pound baskets of plums, besides some other fruits. When these are reduced to barrels it makes an equivalent to 350,000 barrels.

Up to last spring all of these associations were in Niagara County. They had formed a County Association to own a brand under which all of its fruit was packed. There were ten associations, all in one county, all using the same brand, although they had different salesmen. When the proposition came up of putting up packing houses in the other four counties, the question immediately arose, what brand shall we use? It was decided to develop one organization which should be a parent organization for all of these others, owning the brand and employing proper inspectors to see that the brand was lived up to and so forth. We feel that the brand is the main thing. We have had several growers, and some are now members of the association, whose pack of fruit with their special brand on it has been better than the average grower's and is known on the New York market, and brings 25 to 50 cents per barrel premium. Yet when the New York market is not working properly their brand is no better than the other man's on the Philadelphia market. The only time we want tonnage is under one brand, so that they may be known on all the markets as the Sun-Kist oranges are known everywhere. That carries with it a tremendous amount of responsibility to see that there are no packages which go out under that brand that are not up to standard. We are getting that standard very largely, by one-quarter-inch sizing our apples; no grade of apples varies more than a quarter of an inch in size. On peaches we have made divisions, all below an inch and three-quarters are number 3's or X. The inch and three-quarters to two inches are Cataract brand, XX, and two inches and up are Cataract brand XXX.

I want to stress the apple situation. It is not so hard to get variation in the peaches, but it has been difficult to handle one-quarter-inch-size apples so far as the trade is concerned. Much of the trade have tried to discourage us packing in quarter-inch sizes. Each of these barrels is faced with exactly the same size as they are filled, and the colour is not selected for the face. When the consumer or buyer gets one of these Cataract barrels he knows every apple right down through that barrel is exactly like the face. We have stood four

square on that proposition despite all the trade has said, and we are beginning to make an impression. In fact, right from the first we have not lost anything by so doing, and this year we are beginning to get a premium. We have five different sizes in apples, 2 to $2\frac{1}{4}$, $2\frac{1}{4}$ to $2\frac{1}{2}$, $2\frac{1}{2}$ to $2\frac{3}{4}$, $2\frac{3}{4}$ to 3 and 3 up. There seems to be a place for each size and our $2\frac{1}{4}$ size are selling despite all the trade says; our $2\frac{1}{2}$ are selling despite the fact that the trade want $2\frac{1}{2}$ pack faced with $2\frac{3}{4}$. They are selling for just as much as the old style of pack, and we are getting premiums on our $2\frac{3}{4}$. I hope we may make an impression on you with our quarter inch sizes and get you to help us, because it will mean much to us and the whole barrelled industry to have apples packed in quarter inch sizes, and I think it will bring back the consumer's confidence faster than any other one thing.

So far the apple grading business has been done by growers. The grower has his point of view, the customer may have an entirely different point of view. The big proposition that the central organization has been putting over this year has been the packing of quarter inch sizes. In talking about this proposition either in public or private we are usually asked, "How do your prices compare with the independent grower's, the man who is not a member of the Association?" I say, "I don't know," and so far I don't care. We have not been operating to secure prices; we have been operating to secure confidence, and I am quite convinced from the experience of the last few years that we cannot get prices until we have accomplished three things. There are three things which a co-operative association can accomplish and are very worthy things to accomplish; they are three things that have not been accomplished by any other agency or association and I think they are the hope of the fruit business. They are: 1st, Standardization; that is fundamental and the others cannot come until that has been made sound. Next, is Merchandizing and Distribution, and the third is Advertising. I don't believe we will accomplish prices until we have put all three of these across.

There are several reasons why the Associations have not tried to combine so far as price is concerned, one of them has been the necessity of impressing upon our members the need of standardization regardless of price. Some years a dealer will out-guess a market or over-guess a market, will pay more than the Association can secure, and in the year when the dealer has over-guessed the market and then backs it up by paying what he has agreed to pay, in such a year it is a better proposition not to be a member of the Association when you are looking for prices alone.

In 1917 one of our Associations at Burke, New York, was selling peaches just as fast as they could pack them up at \$2.50 a bushel, and the local dealers were paying \$1.25. Things were going nicely when along came that car shortage. I was in their packing house one Monday when they had 20 barrels of peaches standing on their floor, that had been there since Thursday and they were a total loss. When that Association got through it was able to pay 95 cents to each grower. Some dealers paid \$1.25, others got from under, some paid in paper, but if price had been the only object that year the Association would have gone under, because it had not got the price the dealers were paying. I believe that our growers have got the vision of these very things, so that they may leave to their children a fruit industry which may be safe, which may be substantial and which may pay in the end.

We have been going over four years in some localities. It is getting under way in splendid shape in others, and so far all we have been trying to do has

been to standardize. I think we are beginning to secure results. We shipped ten cars of apples to one buyer. I assembled those ten cars from seven different associations in five different counties and when that fruit arrived I asked the buyer which Association gave him the best deal, and I am proud to tell you that his word came back he could find no difference between those ten cars. So I believe we are getting standardization. We have not attempted standardization of color as yet; all we have attempted to do has been size. This year we shall probably undertake a little standardization work along the line of color which will probably be necessary, because there is another feature coming up. Our members are now wanting a central sales organization. It is very natural they should want that, and I am glad to see it coming. Our Association find that they are now in competition one with the other; selling the same sizes and the same brand, and selling it through different agencies. The receivers are beginning to demand a central selling rate, so that they may all buy at the same prices on the same day for the same goods, and they want a man put into the market who will distribute that fruit for them and put a little system into the deal.

Another thing that has been driving the Association into a central selling organization has been a lack of buyers. This has been one of the years when there were no buyers in the district, and we wakened up to the fact that we have been depending on the man who came into the district to buy. The independent grower has been forced to consign, and you know what consignments usually amount to. One man characterized it by saying, "There's only one thing to say about consignments, and that is to say good-bye."

Our Associations have hesitated to have one central selling arrangement because they have not been able to visualize a man big enough to handle the sales. It is a tremendous job to sell even what we already handle, but there is in the district potential sales of \$50,000,000 a year, and we have not been able to get the man to tackle these sales. We have been looking for that man, and we have come to the conclusion "There ain't no such animal." We are changing our minds now, and are looking for a system and not an individual. In a year like this, when there are no buyers in the community, what we want may be more clearly visualized by a wheel. The hub might be the distribution office in the centre, the spokes establishing connection with 100 or 200 different cities and distributing points, and then our salesmen are on the end of these points out on the rim of the wheel where the people are who want to buy. That is what we are trying to find at the present time. I have travelled about the Eastern States for the past month trying to get the system of various organizations, and from them develop a system which will take cognizance of the people who come into the district to buy and are willing to pay cash. I believe these are the best kind of sales that can be made. I hope whatever system we establish may include some arrangement whereby the man can buy at the loading points if he is willing to pay cash and take the responsibility, and I think he should have a premium for taking the risk incurred in transportation.

There is one other thing why our Associations want to get a central selling arrangement. Those who have been in our district know there is a system of cold storages, and in the past there has sprung up a system developed by some people, who, anticipating future markets, have bought heavily, and have put the fruit into cold storage expecting to make large profits. Their example has encouraged the growers to do these things themselves, and our Associations have been putting some of their fruit into cold storage; and yet there is nobody in Western New York who can clearly foresee the future, and say whether or not

it is going to be a profitable thing to store apples. We want to have some system where we can start this fruit going as soon as it is produced, and keep it going right through the season in certain quantities, putting a certain proportion into cold storage, depending on varieties. We should put our Wealthies on the market in the fall when they should be put on, and keep our Baldwins until after Christmas. One of the worst things I know of was this year, after Christmas, when we took a survey of the storages and found them heavily loaded with Wealthies and not heavily loaded with Baldwins. Baldwins should not be eaten until after Christmas, and yet a large number of them are put on the market before Christmas.

If we can start merchandizing this fruit going in the fall and keep it going week by week through the season, is it not fair assumption that we can change our cold storages into a warehouse proposition and not a gambling house? That is a thing that we want to accomplish.

In advertising, nothing as yet has been done at all. That is still in the future; it cannot come until standardization is more perfect than it now is. It will not be effective until we have a distribution system to back it up. If we want to attempt national advertising we must have a system whereby people can buy them on their own fruit stands. One advertising specialist, who addressed our meeting the first of June, said a thing that went right through me; he said, "A thing to be successfully advertised must be of such a nature that it will sell without advertising." There is a lot to think about in that. Advertising simply provides a stimulus; it does not provide the whole system. There is a big future in advertising. The results that have been secured not only by the California people but also repeated in one of the Pacific Coast Co-operative Associations, have created a friendly feeling towards their products, and they have been able to merchandize a crop in heavy production years without any decrease in the price per package. That is really worth while and it is something to think about.

Just to sum this up: The hub of the fruit industry of Western New York as we now see it seems to hang upon these three things: first, standardization, that is fundamental; then, distribution and merchandizing, and we simply cannot merchandize and distribute unless the fruit is standardized; and third, advertising, and advertising cannot come until we have first standardization and then the marketing and machinery to make advertising effective.

MR. FISHER: Can Mr. Peet give us his idea of the arrangement of an ideal packing house in order to put the fruit through with the best system and the least cost.

MR. PEET: There are several features that are beginning to be principles in such an affair, and it depends on the number of "ifs," but I will try and answer your question in this way: A packing house is usually divided not by partitions, but in our mind, into three divisions: First what we may call the receiving room, second a packing room and third a handling room after the fruit is packed. The receiving room does not need to be very large. We had quite a jolt; we thought it ought to be very large. We find that the smaller it is the better it is. Especially on peaches, and so far as peaches are concerned we do not have any receiving room at all, because the fruit is emptied right from the wagons on to the grading and sizing device.

So far as apples are concerned the receiving room is large in proportion to the number of members. An Association packing 20,000 barrels of apples

with only ten members does not need as large a receiving room as one with twenty-five members, because you must have a place for the fruit of each man. In spite of all we have been able to accomplish, a grower will bring in three or four varieties on each of his loads, and we have to have room to set aside those we cannot grade to-day. For an Association of 20,000 barrels and ten members I would say a receiving room of 10 x 16 feet is plenty large enough, or perhaps 12 x 60 feet.

The packing house floor depends altogether on the type of grader that is used. I presume you will ask me what is the best sizing machine, and if we start that I would not get home to-night. On peaches we have been using the Burke machine manufactured at New Fain, New York. It is graduated like one of our big gun barrels that is used on a man-of-war. We are finding that quite limited in its capacity, and its ability to change sizes. I have just found another peach machine which I think is much better and that is the Skinner Machine.

Q.—What apple grader do you use? A.—Use all of them, but we think the best is what we call the Succatash. It starts with a hopper. We make it at home and it is a combination of several makes. We have also made up our minds we want packing tables. We want the fruit to discharge from the sizing machine on to packing tables so that each person can operate independently.

Q.—Do you handle more than one grading machine? A.—Yes, we handle more than one. We have some Associations that have two of the Burke machines.

PROF. CROW: Do you have any trouble with the bruising of the apples on the way from the orchard to the central packing house?

MR. PEET: We don't find much of that, because we have pretty good roads and we make the men use springs under their wagons. We do have a lot of trouble with the pickers, especially where we are paying them by the barrel. They will man-handle that fruit something awful, but this year we hope to be able to say we won't pay by the barrel but by the day.

Another idea that occurs to me in using the barrel as an orchard package: Do not make the mistake of putting the heads in the bottom of the barrel. We had some pickers who would put these in the bottom of the barrel so that the barrel did not contain more than $2\frac{1}{2}$ bushels. We take the heads out and put them in an empty barrel criss-cross. We are getting away from the barrel as an orchard package, and we are going to use a crate. We need to have some other orchard package than the barrel but we have not come to that yet.

Q.—Has your unit a manager? A.—Yes, but we call him the superintendent.

Q.—Is he a highly paid man? A.—No, I think he will run from \$35 to \$50 a week during the packing season. He has nothing to do with the sales.

Q.—Do you think the central packing house idea with peaches could be worked out successfully? A.—Yes I do, I think we have more of a future in centrally packing peaches than with apples. I presume you refer to the injury by packing machinery. I will guarantee that not nearly so much injury is done to the peaches by packing machinery as is done by the package into which it is put.

Q.—Can you ship out the same day? A.—Absolutely, if we get the cars. This year we did not get the cars; but you would be in the same position if you did not go to the packing house. We were short 50 per cent., and of the 50 per cent. we got, 50 per cent. were not iced.

Q.—What are your grades? A.—We are just packing so far in A. grade. A. grade refers to the grade of the fruit and not its size. You might have a two inch and it will be A. grade. Fancy grade goes one step higher in color, and then there are other grades which are specified by the law but which we don't use.

CAN PRODUCTION COSTS IN THE GROWING OF SMALL FRUITS BE LOWERED?

E. A. ORR, CLARKSON.

My subject is, "Can the production costs of small fruit be decreased?" I claim they cannot. We have listened this morning to the address from the basket man from Oakville, who told us his product had advanced in price, and I think every other class has advanced. I noticed the nurserymen said yesterday that if there was a standard put on the fruit trees it would be a great detriment to them. In our case we feel we have been very much handicapped by the extreme prices which we had to pay for labor on the farms, and if labor is not skilled on a small-fruit farm it is very disastrous.

I will try to give you an estimate of the cost of an acre of berries at my own farm at Clarkson. People have an idea that all the land at Clarkson is fruit-growing land but it is not. They have some good land at Dixie; they have portions below the track at Clarkson and a small portion above the tracks, therefore my prices may be a little high, but I may venture to say I am very nearly accurate.

CLARKSON DISTRICT. COST PER ACRE STRAWBERRIES.

	1st Year	2nd Year
Interest on Investment, \$1,000 per acre—2 years.....	\$120 00	\$60 00
50 tons of manure at \$2.60 per ton.....	130 00	
Hauling, manure from station 50 tons—Spreading at \$1.50 per ton.....	75 00	
Plowing, harrowing, rolling, discing and cultivating.....	15 00	
8,000 plants at \$10.00 per thousand.....	80 00	
Planting—2 men for 3 days.....	24 00	
Cultivating—3 times a month for 5 months, with man and horse at 60c. per hour.....	27 00	
Cultivating—3 times in fall—9 hours.....		5 40
Hoeing and placing runners—2 times per month, for 5 months, each time 1 man for 4 days.....	160 00	
15 tons of manure for covering at \$2.60 per ton.....	39 00	
Hauling from station and spreading at \$2.00 per ton.....	30 00	30 00
Raking off covering—1 ½ days \$4.00 per ton.....	6 00	6 00
Hoeing—twice in spring—1 man for 4 days each time.....	32 00	32 00
Picking—7,000 qts. at 3c. per qt.....	210 00	210 00
Baskets—\$8.25 per thousand.....	57 75	57 75
Crates—260 cases at 32c. each.....	83 20	83 20
Carrying berries—1 man for 10 days, \$4.00 per day.....	40 00	40 00
Packer—10 days at \$4.00 per day.....	40 00	40 00
Hauling to Station—2 trips each for 10 days.....	40 00	40 00
Express—12c. per crate—260 crates.....	31 20	31 20
Cartage—2c. per crate.....	5 20	5 20
Transportation of pickers from Oakville by truck 10 days—\$8.00 per day.....	80 00	80 00
Team and movers to cut off vines.....		2 00
Ploughing off the edges of rows.....		6 40
Weeding 18 rows—8 hrs. at 80c. per hr., \$1.00 per row.....		18 00
Shaking the centre of rows out—1 man for two days.....		8 00
	\$1,325 35	\$794 15
Crop sells for 2 years at 16c. per qt. (14,000 qts. at 16c.).....	\$2,240 00	
Taking care of berries 3 years.....	2,119 50	
PROFIT.....	\$120 50	

I do not think any of these prices are excessive; that is what it practically cost us to look after our berries. I have not dealt with the commission to the commission man, but the commission on these 14,000 quarts will cost you 2c. a quart. Drawing the pickers back and forth to the station and the picking costs you 4c. a quart. Your manure costs you 1½c. a quart. Your baskets cost you 2c. a quart; therefore you have to pay out 9½c. a quart. All these prices are figured on this year's costs.

Q.—What kind of manure do you use? A.—We get a mixture from Toronto.

Q.—Do you use paunch? A.—Yes, I have used it. It works out first-rate. The motor is taking the place of the horse in our cities which makes for scarcity of manure.

REPORT TRANSPORTATION COMMITTEE

Moved by MR. MAYCOCK, seconded by MR. JOHNSON, and carried unanimously.

“Resolved: 1. That in the opinion of your committee it is in the best interests of the fruit industry of this province that it is not advisable to have compulsory loading to higher freight minimum than that now provided by tariff regulations now in force, and that consideration should be given to the lowering of minimums for certain varieties of fruit by express shipment.

“2. That this Committee further recommend that the Ontario Fruit Growers' Association go on record, as supporting an application to the Railway Companies, and the Board of Railway Commission, for a “Carriers' Protective Service” to be put into force at the earliest possible date.

“3. Further that a permanent transportation committee of not more than five or less than three be appointed.”

The report of the committee on resolutions was adopted as follows:

“1. That the thanks of this Convention be tendered to the Hon. Manning Doherty for his very able address delivered at our evening meeting, and also for the interest he has shown in all matters pertaining to the fruit industry.

“2. Also that we, as an Association, would ask the Department to require that the manufacturers of 6 or 11-quart baskets put their name on the bottom of said packages so that it will be possible to inspect for defective making.

“3. Also that we, as an Association, express our thanks to Mr. Peet for the valuable information that he has imparted to us covering the handling of fruits in a co-operative way in New York State.

“4. That in view of the statements of the Royal Stock Show that their buildings will be ready for an exhibition in December 1921, we instruct our Directors to arrange for the holding of a National Apple Show in conjunction with the Royal Show, and ask the Federal Department of Agriculture to hold a Dominion Conference of Fruit Growers at the same time and place.

“5. That this Convention place on record on behalf of the fruit growers of Ontario, its deep appreciation of the valuable information presented to this convention by Prof. A. Leitch.

“Also that copies of these resolutions be forwarded to Prof. Leitch, and to the Hon. Minister of Agriculture.

"6. That the Directors be asked to appoint a Committee to consider and forward the scheme outlined by Mr. Baxter, Federal Fruit Commissioner for the central handling of the sales of apples.

"7. That a Committee of fruit growers be appointed by the Directors to watch any changes that may be proposed or made on the present tariffs on fruits coming from or going to the U.S.A., and that they keep in close communication with the Fruit Commissioner, Ottawa.

"8. That the Board of Directors of the Ontario Fruit Growers' Association be requested to take up at once with the Minister of Agriculture, the matter of extension in educational work in the interests of the fruit industry of Ontario."

The Resolution was carried with the understanding that the Directors appoint the Committees asked for in Nos. 6 and 7.

REPORT OF THE HISTORICAL COMMITTEE FOR 1919 AND 1920.

A. W. PEART, BURLINGTON.

The winter of 1920 was cold but not unfavourable for trees and vines. The temperature was fairly steady and trees generally passed through the year in a healthy condition. The San José scale is beginning to reappear, notwithstanding its severe check by the cold winter of 1917-18.

Black knot, especially on plums of the Lombard and Gage types, is making headway, and will have to be dealt with radically in order to maintain our orchards.

Fruit prices during 1919 and 1920 probably reached the peak. In 1919 apples were sold at \$1 to \$1.10 per bushel, tree run, for good fall and winter varieties, delivered at the packing houses. Bartlett pears \$1 per 11-quart basket, and Keiffers 2 to 2½ cents per pound; plums 50c. to \$1 per per basket.

In 1920 prices of the smaller fruits were fairly well maintained, cherries, raspberries, strawberries and grapes sold well, but a heavy slump took place in plums, pears and in apples during the late fall.

Grapes for once came into their own. Not only were they a heavy crop of excellent quality, but prices ruled at \$100 to \$120 per ton, which has had the effect of giving the grape growers renewed confidence in their vineyards.

Plums fell down badly, due partly to the very heavy crop, and also to the lack of cars for proper distribution over the country.

Keiffer pears were hard to sell at any price.

Apples started off well especially those of high color, prices ranging from 90c. to \$1 per bushel, tree run. Later in the season, however, a sharp downward movement began, and prices sagged. They were hit by the general lack of confidence and bearing down in prices, as well as a shortage of packages, without precedent in the province. A peculiar situation arose, while prices were going down the cost of production was increasing. Wages for orchard help advanced to four and five dollars a day, the cost of implements and machinery to run our farms had increased 100 per cent. over pre-war prices, and there was a general lack of interest and efficiency in the service on our farms. Packages for small fruits doubled in price, while barrels were hard to get at even \$1.50 each, and boxes and hampers at 35 to 40 cents.

Some of our enterprising dealers shipped many carloads of apples in sacks holding 1¼ bushels, while others took some of the crop by shipping in bulk.

On the night of November 12th there were 7 degrees of frost. Hundreds of bushels of apples were still on the trees, and even some of those in barrels in the orchards were injured by the continuous low temperature during that month.

While we are speaking of apples it may not be amiss to recall to our minds, that over 50 years ago, there were apples handled and shipped from this province.

THE LATE GEORGE E. FISHER.

The following is an extract from a letter kindly furnished to us by Mr. Hodgetts:

George E. Fisher was born in Nelson Township, Halton, in 1850, on the farm which he owned and operated until his death in July 1919. He was a man of wide sympathies and interests, a forceful speaker and writer, and had the rare faculty of saying a good deal in a few well-chosen words.

He took an active part in the various activities of his community—the Grange, the school, and especially the advancement of the fruit industry.

In 1887 he helped to organize the Burlington Fruit Growers' Association, and was the first president. Twenty-five years ago he was a useful member of the Ontario Fruit Growers' Association, and served on several committees.

For several years Mr. Fisher was the president and manager of the Burlington Canning Company. He was a member of the Halton County Council for two years, a director of the Halton Mutual Fire Insurance Company for several years, and also of the Hamilton Fire Insurance for a time.

Mr. Fisher, 25 years ago, was one of the largest fruit growers in the Burlington district. About 1885 the apple growers, under his management, began to ship apples to England and Scotland in carload lots.

When the San José scale invaded the southern portion of the province some years ago, Mr. Fisher was commissioned by the Hon. John Dryden, Minister of Agriculture, to investigate, experiment and report on the most efficient remedy. He went into the work very earnestly, boiling lime and sulphur in varying quantities and proportions, and making tests from time to time on scale-infested trees until he reached a remedy which was effective, and which is still in general use, in its main features.

In the passing of Geo. E. Fisher, the district lost an able and a good man.

THE LATE WILLIAM ARMSTRONG.

William Armstrong was born in 1847 in Chambly near Montreal, and was of Scotch descent. He was educated in a private school, and in his younger manhood went into the dry goods business with the Morgan Brothers, Montreal. Later he moved to St. Catharines, and continued in the same business for several years.

In 1881 he began fruit farming at Queenston, in which as the years went by he was enthusiastic and successful. From time to time he was awarded many prizes for fruits at the local fairs, the Canadian National Exhibition, Pan American at Buffalo, and was the winner of the Wilder Medal. His farm was also awarded 1st prize in the Ontario Orchard Competition, 1911. He was always much interested in the fruit associations, schools, Agricultural College, Experimental Farm and in historical societies, was a Liberal, a Methodist and a temperance worker.

During the past few years Mr. Armstrong enjoyed leisure on his old farm during the summer, and went to Florida in the winter, where he made many friends, and became a member of the St. Augustine Touring Club.

While there this winter his death occurred and the remains were brought home and interred at Queenston on Feb. 6th 1921.

Thus lived and passed a man of usefulness and of good influence.

SPCL SB 354.6 C2 F783 1920

